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EDITED BY THOMAS MEEHAN,

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The Gardener's Monthly.

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Horticulture, Arboriculture, Botany and Rural Affairs.

EDITED BY THOMAS MEEHAN.

Old Series, Vol. XI. *JANUARY, 1869.* *New Series, Vol. II. No.* 1.

HINTS FOR JANUARY.

FLOWER GARDEN AND PLEASURE GROUND.

Everybody knows that January is but the introductory chapter to our new year's work. Every book has its preface—every job has, or should have, its plan. We have our work marked out, good reader, for our monthly hints for the next year, as we trust you will, on your part, have yours for the garden. Now is the time to settle on what is to be done in the way of maintenance, alteration or improvement. A chapter might be written on the very frequent want of foresight exhibited by those who would have gardens.

Every one likes gardening. But it is not unusual to find many who pretend to have found it an expensive luxury: and not all pretension, either,—for we often see money so uselessly wasted, that we wonder people do not sometimes tire before they do. *One half our people have gardens too large!* Even the closest calculators seldom find their facts within their figures, either in first cost or subsequent maintenance; and we would earnestly recommend all who propose to have gardens and pleasure grounds, to lay out only half the space, or expense they think they can afford. If your ideas run on fifty acres, make it twenty-five; or, if you think it will cost you two thousand a year to maintain it annually, calculate so that you may have four thousand to do it well.

One half the gardens in our country are disgraces; and it is generally through such miscalculations as those we have referred to. Neatness and excellence in everything should be the aim, —not extent. Now, we seriously propose to our readers to look over their grounds at this season, and *see what parts can be dispensed with;* for we do not doubt that many of them have looked too often to their purses, without the heart going with the action.

Some part may be turned into the adjoining farm; or some other disposition made by which to turn it into a profit. But, if nothing of this kind present itself, it may be turned into some pretty feature, that would not be so expensive as the keeping of it regularly dressed and attended to. One of these is, to plant large belts or clumps of trees. These, if planted thickly, soon cover the ground, and take care of themselves.

Trees always give a great value to an estate,—and, as they grow up, not only really add to the beauty of the place, but much lessen its working expenses. They also givea little wildness to the spot, which is in itself a beauty; for, when we speak of neatness as essential in a garden, we mean of course, those parts which one would be expected to keep neat, and which will look all the more neat for having a little wildness to contrast with them.

For planting such places with trees, amongst evergreens which we would recommend, are Norway Spruce, Scotch Pine, Austrian Pine, White Pine, Hemlock Spruce, Balm of Gilead Fir, Silver Fir, American Arborvitæ, Red Cedar; and amongst deciduous trees, the Ashes, Maples, Lindens, Chestnuts, Oaks, Walnuts, in their various species, as well as the Catalpa, Kentucky Coffee, Robinia, Paulownia, Magnolias, Tulip Tree, Birches, Beeches, Mulberries, Gums and, where the leaf worm does not exist, the Elm.

Clumps of shrubbery often have a beautiful effect, and, once planted, require no care for many years. They may be selected from amongst the Spiræas, Lilacs, Syringas, Mock Orange, Upright Honeysuckles, Weigelas, Deutzias, Forsythias

Elægnuses, Pyrus japonica, Hypericus. Willows, Almonds, Calycanthus, Dwarf Horse Chestnuts, Dogwoods, Purple Hazels, Snowdrop Trees, Bird Cherries, &c.

Very often, besides too much garden to clean, or lawn to mow, there is too much of walks or roads to look after. These are frequently a source of great expense, and should be carefully studied in the first arrangement of the place. Landscape gardeners, especially such of them as are more properly architects, love to introduce them in their plans. They usually help the picture very much.

Before any walk is located, be sure it is absolutely required. A pretty outline should be subservient to this. Utility is the essence of beauty in a garden walk. With these general hints on first cost and maintenance we can only give, this month, the more practical advice to get ready for regular work.

The manure heap is one of those items that can receive attention at this season to advantage. Without a good pile of rich compost, very little success can be hoped for in any kind of gardening affairs. Leaves and litter of every description should be collected whenever possible, and stored in suitable places, where they will not be offensive by their littery appearance. For flowers, generally leaf mould from the woods is very acceptable—not the half-rotted leaves that are immediately on the surface, but such as have been powdered by age, and amongst which the roots of the trees have already penetrated, and rendered of a spongy consistence. We like all manures to be thoroughly decomposed before using, if the garden soil is already light and friable; and to this purpose the manure heap should be occasionally turned over and lightened, to assist fermentation. This, also, is aided by watering the heap with a solution of potash, and which also gives additional value to the manure.

It is a very good practice to cover lawns with manure at this season. Two good results flow from this course: the frost is prevented from penetrating so deeply, and the ground being warmed much sooner in spring, is green and cheerful some time before unprotected lawns, and then the grass itself is strengthened, and its color brightened by the operation. But stable manure has the objection of introducing many coarse kinds of weeds, that would not otherwise exist on the lawn; and so where the grass grows poorly, and strength and luxuriousness are desired, guano and the phosphates are preferred. Many use bone dust, ashes, etc.; but the mowers are apt to feel somewhat indignant, in mowing time, through this material taking the edge off their scythes.

Manure for flower beds, borders, etc., may be hauled convenient to where it is likely to be wanted in spring. Many spread it on at once—but if the soil is frozen very thick, it prevents the early thawing of the soil in the spring, and so no time is gained.

Evergreens set out last fall in windy or exposed situations, will be benefited by a shelter of cedar branches, corn stalks; or mats, set against them. Whether hardy or tender, all will be benefited thereby.

Wherever any part of a tree does not grow freely, pruning of such weak growth, at this season, will induce it to push more freely next year. All scars made by pruning off large branches, should be painted or tarred over to keep out the rain. Many fruit trees become hollow, or fall into premature decay from the rain penetrating through old saw cuts made in pruning. Also, the branches should be cut close to the trunk, so that no dead stumps shall be produced on the tree, and the bark will readily grow over. Many persons cut off branches of trees in midsummer, in order that the returning sap may speedily clothe the wound with new bark; but the loss of much foliage in summer injures the tree; and, besides, painting the scar removes all danger of rotting at the wound.

GREENHOUSE AND WINDOW PLANTS.

The temperature of the greenhouse at this season should be maintained at about 50 deg., allowing it to rise 10 or 15 degrees under the full sun, and sinking 10 degrees or so in the night. Though many of our practical brethren differ from us—men, for some of whose opinions we entertain the highest respect—we do not recommend a very great difference between night and day temperature, we think 10 degrees ample allowance. It is following nature, no doubt, but we would rather strive to beat nature. She can not make the specimens we do, nor flower them so beautifully or profusely; and in many other respects we think the practical gardener can much improve on her red tape notions and old-fashioned courses.

Many plants will seem to be full of roots, and the temptation to repot will be very great; but if a plant is desired to flower freely, the fuller of roots the pot is the better. Continual pot-*tering* is the bane of plant culture. If the soil is so very much exhausted that the flowers are likely to be small and poor, a half inch of the old soil in the pot, on the surface, may be replaced by a top-dressing of rich compost. But watchfulness must be afterwards exercised, or the plant will get over-dry, as the loose soil on the top will often appear wet, when, in reality, all below is as dry as a powder horn.

In many greenhouses, we have noted lately, more attempts at a tasteful arrangement of the plants, than used formerly to prevail, when the only object of a greenhouse seemed to be a mere store place for border flowers during winter. This is very commendable, and might be much more improved on. Every few weeks the plants may be reset, and the house made to appear quite different. In the end where the lowest plants once were set, now the taller ones may be placed. here a convex group, and there presenting a concave appearance. Drooping plants on elevated shelves, and hanging baskets from the roof, make little paradises of variety in what was once unbearable monotony.

Gardeners often wish to know the secret of maintaining a continued interest on the part of their employers, in their handiwork; and this is one of the most potent—continued change and variety in the appearance of everything. Beautiful flowers, graceful forms, elegant combinations, all developing themselves with a healthy luxuriousness and everchanging endlessness, will wake up an interest in the most indifferent breast.

Window plants suffer much at this season from the high and dry temperature at which it is necessary for human comfort to keep our dwellings. Air can seldom be admitted from the lowness of the external temperature. Saucers of water under the plants do much to remedy the aridity from which room plants suffer. In such cases, however, so much water must not be given to plants as to those without saucers. The water is drawn up into the soil by attraction; and though the surface will appear dry, they will be wet enough just beneath.

The more freely a plant is growing, the more water will it require; and the more it grows, the more sun and light will it need. In all cases, those which seem to grow the fastest should be placed nearest the light. The best aspect for room plants is the south-east. They seem like animals in their affection for the morning sun. The first morning ray is worth a dozen in the evening. Should any of our fair readers find her plants, by some unlucky calculation, frozen in the morning, do not remove them at once to a warm place, but dip them in cold water, and set them in a dark spot, where they will barely escape freezing. Sunlight will only help the frost's destructive powers.

COMMUNICATIONS.

REMARKS ON HYBRIDIZATION.

BY HON. MARSHALL P. WILDER, PRESIDENT OF AMERICAN POMOLOGICAL SOCIETY.

Impressed by the remark of Dr. Lindley, quoted in my last article on hybridization, may we not say, how vast and grand is the domain of nature! The very thought of it is overwhelming; and when we consider the undefined and possible powers of the human mind, who shall set bounds to what can be accomplished by the hand of man in the cross-fertilization and improvement of plants?

Starting from a standpoint that all organized beings are resolvable to a few simple forms, it is impossible, with our present state of knowledge or of facts, to define the precise limits where an expression of nature begins or ends: so that what naturalists have called genera and species are but dictionary terms, which enable us to classify them in some convenient manner for the study and invention of the human mind. Botanists have so ingeniously arranged species and genera as to furnish an almost entire series of forms, from the original to its most outward semblance, and have, not unfrequently attempted to supply a lost link which science had failed to discover. Thus we endeavor to give a description of those variations in the plant world, which are so constantly coming to our notice under cultivation or *domestication.*

Plants which seem, in a sexual sense, to be repugnant to each other, may be brought closer

by the changing effects of culture, produced by artificial soils, temperature and moisture; so much so, as to alter the size, structure, seed, and character of the plant. These deviations sometimes appear like distinct and new creations; and, although they may sometimes be traced back to a common type, they are evidences of what can be done by the hand of man.

Although not in connection with hybridization, we may note, in support of what I have written, that the effects of this culture are seen in the innumerable new plants derived from sports—being no more or less than the results of unnatural or uncongenial culture. Thus we have other sports of plants made into varieties by "fixing the graft"—that is, grafting off the sporting branches, and thus perpetuating it.

And, just here, let me say, that these sports or aberrations, when grafted off, become less liable to sport again than the flowers of the mother plant. In those sports taken from the Camellia Mrs. Abby Wilder, I have two self-colored sports which have, by this process of grafting, become true and permanent varieties. Although the flowers of the mother plant are white, with a pink stripe, one of the sports thus taken off* (Grace Sherwin Wilder), is a deep blush, several shades darker than Camellia Lady Hume; the other (Abbie Tryphosa Wilder) is of a clear pure rose color, and both are as perfect in form as the old Double white, and as true and persistent in color, not having varied at all during a period of more than ten years.

And what may we not expect, in the way of aberration, in structure, color, etc. Who would have thought that, from the single Scarlet Pelargonium, we should have derived the new double P. Gloire de Nancy? Or that, after twenty years' trial, the Pelargonium hederæfolium at last consented to be impregnated with P. zonale!

From such incidents, and there are many, it may not be deemed rash or visionary to have tried the Gloriosa superba on the Lilium lancifolium.

SOME WINTER FAVORITES.—No. 4.

BY JAS. C. JOHNSTON.

GERANIUMS.

In former numbers of this journal, attention has been directed to this invaluable floral resource for winter decoration. The present series of papers would be very incomplete, without passing in review a selection of those we deem the best, even at the risk of repetition. Writing as we do, September 17th, it will be too late to reduce any of our suggestions to practice, so far as cultivation is concerned, but not too late to obtain the plants. However, some brief outlines of experience may be acceptable without reference to seasons.

First, as to Zonales. It is a mistake to suppose that all these are eligible as winter bloomers. Some are extremes—shy and sparing of their trusses; others have a most undesirable habit of growth, gross in foliage, and with lanky stems. Compactness is wanted, with a generous tendency to early and continuous blooming.

We have tested, under glass, many hundreds of sorts; rejected as many, and place our chief reliance on a few faithful stand-byes. In the next place, it is usual to depend on the flower beds to furnish a supply of Zonales for the greenhouse, just before the advent of frost. That is a shabby resource, and, like all shabby practices, comes to no good. They lift badly, balls being out of the question, and are a long time in recovering from the shock. During this ordeal most of the leaves are lost. The plants are saved, to be sure; but few, of any size, are ornamental until March or April.

But we want flowers, lots of them, in November, December, January and February. With that object in view, young stock must be propagated at intervals, say from March to June, and forwarded in pots. Commence with the very smallest size; shift occasionally, but always adhere to the next in rotation, and never indulge in large shifts. The effect of this treatment is to obtain stocky plants, and prevent premature blooming, frequent shifts having that effect. In no other way can fine specimens of Zonales be grown to bloom in winter. The last shift should be in August, for the largest sized plants; September for the next size, and October for the last.

As the Scarlets increase in size they require larger pots than all the other colors. The Painted Zonales thrive best in a contracted space; so do most of the Pinks, Salmons and Whites. Pinch off every flower truss as they appear, until the pots are removed into the house.

Be in no hurry to do so, if you have cold pits as a city of refuge, when the nights begin to hold communication with Jack Frost's couriers. Give a little weak manure water to the Painted Zonales in November, but not afterwards If the compost is right, the high colors are better without liquid manure, as it stimulates leaf growth more than the development of flowers.

ALICE—Scarlet Zonale.

There are some other Scarlets with a larger truss and more perfect flowers, but we do not know any to surpass, scarcely to equal, this admirable sort. It blooms abundantly and continuously; the color is exceedingly vivid, the trusses finely rounded, and the habit of growth all that could be desired. For large specimens we give it the preference.

EXCELLENT.

Very deep cerise, nearly scarlet. As good, in its way, as Alice—we could dispense with neither. Small, medium and large specimens, blooms finely.

Other Scarlets—Provost is good; Dr. Lindley not at all good, with us; Leonidas, capital, but not sufficiently proven; so of other late introductions.

TRENTHAM ROSE, (fine Cherry Red.)

"Old, but has not been beaten." So says Shirley Hibberd, the best authority in England, and we endorse his opinion. If it has a fault under glass, it is, liability to grow too fast. But others are much worse in that respect; for instance, Donald Beaton,—give T. Rose ample room, elbow room, we mean,—and it will repay you for the space. If Donald Beaton would keep within bounds, he is grand; indeed, we can't spare him for back tier purposes. He mounts up aloft, between White Camellia, 5 feet high, and the contrast is superb.

SOUVENIR DE SIR JOSEPH PAXTON, (Rosy Pink.)

In our estimation, this is the best Zonale of its color for winter purposes; indeed, it has no fault, except its absurd name. Habit compact, trusses very large and finely shaped.

MRS. WM. PAUL.—Pink.

Almost equal to the Souvenir, only paler in color, but a most charming subject under glass. Next to the preceding couple, Beauty de Suresne may be adopted—a very good Pink.

MADAME RUDERSDORF.—Carmine salmon, white edge.

This is, perhaps, the most showy, useful and persevering winter bloomer of all the Zonales. All sizes of plants bloom finely, from 9 inches to 1½ feet high. The dark zone foliage is also very handsome. There is a still newer one, of the same color, which goes ahead of Madame in the perfection of its flowers—the "Lass O'Gowrie." This superb Zonale is not yet distributed by the raiser. Bridesmaid is a very effective salmon in February and March. Not yet superseded in its particularly bold shade of color.

CRYSTAL PALACE GEM—Cerise.

The excellence of this Zonale ought to satisfy the most exacting critic. We allude only to its merits under glass.

Among a few others we are unwilling to dispense with, we mention Indian Yellow; most useful in small pots. The color decidedly different from all the other Red Zonales.

PRINCESS OF WALES—Zonale occulate.

Still one of the best; pure white edge, with a distinct cerise eye. The occulates bloom sparingly after a certain age. The best plants are those struck in March, and rather encouraged than checked in all stages of growth, taking care to remove all bloom buds whilst out of doors.

MADAME WERLE—Occulate.

A delicate, choice flower when well done. It is not a true occulate, having only a narrow stripe of carmine pink on the edges of the petals. Small plants do best.

WHITE PERFECTION.

There is no better White Zonale than this; and, perhaps, it is not superior to Madame Vaucher, although, if there is a difference, we prefer the former. White Tom Thumb is not to be despised, and we have had fine trusses on Snowball.

The above are a sufficient variety of Zonales to furnish an uninterrupted succession of bloom, and plenty of it, from the middle of November till the 1st of May. But we must do justice next to the Nosegay Geraniums, in which section will be found some of the very best sorts for prolific blooming during winter.

CARMINATA IMPROVED—Vivid carmine.

This is a very choice subject; so good that, even in a small house, there ought to be not less than half a dozen pots in bloom at the same time.

SCARLET GEM.

Well named. An exceedingly attractive and striking flower; does well in small pots. Monitor is likewise good; so is Lord Palmerston; but Carminata Improved is better. Lady Callum, for a poorly shaped flower, is by no means to be despised. The color, which is a rather dull pink, is marked by thin stripes of dark red, and is very effective.

RIVAL NOSEGAY.—"Crimson Scarlet."

In a former article we have endorsed this su-

*A similar sport from the Camellia Mrs. Abby Wilder, has been named, in England, the Queen of Beauty.

perb Geranium in terms that require no repetition here. It heads the race, leaving scores of never competitors far in the rear.

There is a prodigious furore, in England, at present, over Tri-colored Zonales, and fabulous prices are paid for the latest novelties. Mrs. Pollock is pretty well known here, which led the van, with a host of followers. We failed in turning her to any good account last winter; so also of Mrs. Benyon and others.

But the Sulphur-leaved and Silver-edged are extremely useful—indeed, they are indispensable. A few pots of the former, well grown and redolent of foliage, have a charming effect amongst the dark green leaves of other plants. We are entirely satisfied with Mrs. Milford and Goldfinch. Both have light sulphur foliage, slightly zoned with pale chestnut. Their habit is good—so good that, if properly grown, there is a mass of finely arranged leaves from the surface of the pot to the top of the plant. They flower sparingly, but are much better without any.

The Silver-edged Zonales are also very useful scattered up and down amongst masses of solid green. Alma, a very old sort, we find better for winter use than any other. There is a gem, in this way, not yet grown here, *Italia Unita*, with a very pure edge of silvery white, and rays of pinky red diverging from the green centre. But it is very shy as a grower—at least we find it so.

The Double Zonales are more curious than useful. Gloire de Nancy bloomed very well with us last winter, but there is nothing decidedly attractive in it. The petals are so crowded, they give one the idea of being dwarfed. One of these days we shall have doubles, with individual blooms an inch in diameter and over.

14. PRIMULA ACAULIS, fl. pleno.

In Europe, this is a hardy perennial; here, it does tolerably well in a cold frame, blooming in April. But we enlist it for service in the conservatory in January and February. These are White, Sulphur, Lilac and Crimson selfs. The first two are the best, especially the White. When judiciously grown, 30 or 40 blooms from one plant is not uncommon, growing in succession, half a dozen at a time. The exquisite purity of the white, and its modest habit of growth, always elicits warm commendations.

Like all plants requiring little protection, this Primula must not be coddled or forced. The result of that treatment is, slender footstalks unable to sustain even puny flowers; and these are often too weak to expand, and so wither up prematurely. When introduced into the house, (not before the first sharp frost), place on a shelf, within 12 or 15 inches of the glass, and in the coolest locality that can be selected. Administer weekly a dose of manure water (by no means strong). Never allow the pots to become dry, nor aphis to obtain a lodgment. As the pips begin to peep up among the leaves, *turn the pots every day*, so that they may not grow all to one side. As they expand, remove to favorable blooming positions, not failing to turn the pots daily, nor to remove every flower stem as it fades.

Our mode of cultivation is, to divide the plants immediately after the blooming season; re-setting them, pairs or a trio, in small pots. The compost must be generous, and not too porous. A little cocoa fibre added is well bestowed, as it enables the plants to resist the injurious effects of extreme heat.

The collar of each plant should be set about half an inch below the surface of the soil, and be kept in that position; for, if exposed to light and heat, they are apt to droop, and perish during the hot season out of doors. If the subdivision and replanting is effected in March, growth will commence immediately, Then, after removal out of doors in May, shift into pots one size larger, and set these in the coolest locality you have, and least exposed to the sun. But under trees will not do,—their shadow would often be acceptable, but drip, during heavy rains, is death to the Primula.

(*To be Continued.*)

GRAPE VINE BORERS.

BY A. J. H. VINELAND, N. J.

On page 354 October number of *Agriculturist*. reference is made to a "vine borer" in Missouri that cuts off vines below the surface. It is also mentioned and partially described in the last *Gardener's Monthly*. This "borer" is an old friend (?) of mine. It is found principally in old rotten oak stumps; I hardly ever dig one out without finding several of these worms. They are about 2 inches long, tapering from head to tail, white bodies and black heads. I lose on an average about 50 vines and dwarf pears annually by these little villains; probably twice as many pears as vines. I have had several apple trees cut off by them, and one standard pear. The tree roots seem often to be eaten entirely up, but the vine roots are only cut through as if they had obstructed the line of travel.

This is no new insect, but will I think probably be found troublesome whenever dwarf pears and vines are planted among decayed oak stumps.

THE SEMINARY OF ST. CHARLES OF BORROMEO.

BY WALTER ELDER, PHILADELPHIA.

The Seminary of "St. Charles of Borromeo," which is just erected and roofed in, and now having its interior floored and divided into apartments, will be, when finished, one of the most magnificent and beautiful school edifices in the country. And when the grounds are improved and embellished in a manner to correspond with its grandeur, it will then be an institution of which a nation of equal rights may well be proud.

The building stands upon an eminence, equidistant from the Lancaster turnpike road, and the Central Pennsylvania Railway; in Montgomery county, and 5½ miles west of Philadelphia. In a whole, it is in the form of the letter M. The front is entire, with the centre and two ends slightly projecting and higher, and surmounted with domes supporting golden crosses. The views of the surrounding landscape from the domes, are extensive and very beautiful. On the east, the City of Philadelphia is descried, with its many spires and towers; on the south, the silvery Delaware appears with its rich commerce gliding upon its bosom; on the north, the rugged banks of the Schuylkill, and the heights of Germantown, Chestnut Hill, and Mount Airy are seen; the westward looks like a boundless expanse of wealthy grandeur. An immense sum of money has already been spent for labor material, and a vast deal more will be spent before the whole place is finished. A praiseworthy liberality has been, and still is shown individuals of different christian denominations in the expenditures.

The grounds comprise 150 acres, (I have been told,) all beautifully rolling, and the soil a fertile loam; a water stream runs through part of the grounds, and a pond or dam has been made and a house with a steam engine is erected upon it, and throws up the water to the house, (now largely used by the plasterers.) A large portion of the foregrounds is in lawn, with many handsome transplanted trees, half-grown. Immediately around the structure, the land is very uneven, but the master mind that conceived the idea of erecting such a spacious edifice for such a purpose, well can devise a plan to smooth the lands around it, and embellish them in a way that they will impart to it the elegance it so richly deserves; then the trees will rise in their best grandeur, shrubbery will smile with profusions of blossoms, and the smaller flowers will glitter in the sunshine with colors of every hue, and the air will be made odoriferous by the fragrance they exhale.

When the whole is finished, it will serve as a lasting monument of grateful remembrance for its generous founder, (the present Bishop of the Diocese of Philadelphia, the Right Reverend James F. Wood,) as did the great temple of Solomon, in keeping alive a pleasing memorial of the great king of Jerusalem, and the wise men of the Bible.

Solomon was not only large minded for having a grand temple, but was also an ardent admirer of the beauties of vegetation, with which the allwise Creator decorated the face of the earth to cheer the life of man. He caused splended gardens to be made around all his fine buildings, and had them richly embellished with trees, shrubbery, and smaller flowering plants. He admired trees for their magnitudes, and shrubbery for their profusion of blossoms; he extolled smaller flowers for their beauties and sweet odors, and had collections set out to bloom all the growing seasons. He often compared them with the purity of God's holy worship; how touchingly beautiful he likened his church to flowers. After recovering from a severe tribulation, here is a brief quotation of his own address:

"Lo the winter is past, the flowers appear on the earth, the time of the singing of the birds is come; the fig tree putteth forth green figs, and the vines with the tender grape give a good smell. I am the Rose of Sharon, and the lily of the valleys. My love is white and ruddy, his cheeks are like beds of sweet flowers, his lips dropping sweet smelling myrrh. My beloved is mine, he is gone down to the gardens to gather lilies, and to feed among the lilies."

I wish that all our modern professors of religion, would show as much love for the beauties of vegetation as did Solomon the wisest, and David the most devout. Churches, Seminaries, and other fine edifices would then no more look forlorn like shipwrecks in the tempests. *Let Botany in the future, be a necessary branch of education.*

A GOOD SEED DRILL.

BY MR. L. KAUFFMAN, IOWA CITY.

In the *Monthly* for November, I notice inquiry from a correspondent of Indiana, for a "Seed Drill" to sow Apple and Osage seed. Two years ago I extemporized a seed drill to sow apple seed, which I have now used two years, and with which I am highly pleased. I can with a team plant ten acres per day, covering the seed completely. I planted with this drill last spring forty-seven acres in apple seed. One of my neighbors planted five acres with it. I then hired it to other parties, who planted forty-two acres with Osage seed.

The drill does its work perfectly, distributing the seed very evenly. These fields of apple stocks were visited by a number of persons during the summer, among whom was Mr. F. K. Phœnix, of Bloomington, Illinois. All of them expressed themselves astonished at the evenness of the distribution of the seed, and the uniform growth of the stocks. There could not have been a half an acre picked out that materially differed from the whole field. As there is no *patent on this seed drill, and none applied for*, I will give a brief description of it, which will enable any one who has an ordinary amount of mechanical ingenuity to make one.

The drill is placed upon two wheels. Mine plants three rows at a time, twenty inches apart, (two feet is a better distance between rows). The machine may be made to plant any number of rows desired, by widening the machine. The planters should be so arranged in distance from the wheels, that in driving back and forth, the same wheel would return in the same track, thereby making a track to go by. If it is intended to plant the rows two feet apart, the outside planters should be one foot from the wheels. The shaft may be stationary on the wheels, with a joint in the middle, or the wheels may be made to revolve around it, as in ordinary wheels. The former plan being much the cheapest. On these wheels is rigged a frame, and on the frame, about twenty inches behind the shaft connecting the wheels, is a box to contain the seed. Through this box runs a shaft, and into this shaft are driven nails or wood screws, these screws should stand out about an inch, and are intended to agitate the seed. The screws should be placed the distance apart on the shaft that it is intended to plant the rows. In the bottom of the box are holes to correspond with the screws on the shaft. In this seed box and on the bottom, is a slide the length of the box running through one end. On the slide is fixed a lever to regulate the feed or shut it off in turning, into this slide are holes cut to correspond with the holes in the bottom of the box. There are hoes attached to the drill similar to those in ordinary wheat drills, only the hoes are four inches wide and can be made of common cultivator teeth. The seed is conducted through leather tubes immediately behind these hoes, the dirt displaced by the hoes will fall back and cover the seed sufficiently if the ground be mellow, if the seed is not covered sufficiently a small light drag can be attached to the drill. On one of the wheels is fastened a cog wheel, about one-half the diameter of the wheel, and on the end of the shaft running through the feed box is a pinion, by this gearing the shaft is put in motion, and the feed is steady and uniform.

Apple seed is usually prepared in the winter. I take one bushel of sand or saw-dust to half-bushel apple seed, of this mixture I sow four and a half bushels to the acre, giving me one and a half bushels apple seed to the acre. I might probably add, to sow four and a half bushels of this mixture per acre, requires feed holes one-half inch wide, and three inches long.

AN "ILLUSTRATED HORTICULTURAL JOURNAL" ILLUMINATED.

BY VITIS.

There is occasionally a complaint in the *Gardener's Monthly*, from some one of its subscribers, I suppose, that some of its advertisements do not prove reliable. Having been a subscriber and constant reader to the *Monthly* from its commencement, I think its subscribers have had very little cause for complaint on this account, much less than the subscribers to some other horticultural journals, or rather to *one* of them, for in this particular I think it stands alone. To show how this one journal has managed one case of this kind, I will give extracts from its pages.

First.—To show what it promised.

Second.—To show how it fulfilled its promises.

The journal alluded to has not enjoyed a very long existence, it first number bears date January, 1867. In its prospectus or advertisement it said:—"With this number we begin the publication of an Illustrated Monthly Magazine, devoted to Horticulture. For a long time the demand has been felt for a journal in this department, of high tone and liberal ideas, employing not only the best talent in America, but the selection of all that is good from the English, French, German, and other foreign works. This demand we design to supply."

In its introduction, page 3, it is said, "—— but, as editors, we shall cordially welcome any contributions from any source; and we ask the aid of all interested in horticulture in carrying out our plans."

"Our pages will ever be open for discussions on subjects of horticultural interest, in which, while avoiding all personalities, it will be our aim to develope the truth."

"Our course will be independent. Having no interest in any horticultural establishment, we shall aim to do justice to all."

Trusting that these explicit declarations would be adhered to, a subscriber to the journal, in September, 1867, sent to the publishers a short communication giving an account of origin of the so called "Main's Seedling Grape," showing from its owner's own words and advertisements, that it was the well known Concord, neither more nor less, and that its earliness was owing to its location. The communication was promptly published in the October number of the journal, pages 253 and 254, with the following remarks:

["We publish the above communication from one of our subscribers, who does not hesitate to give his name, because we believe it to be true; and we hold it to be our duty, as an independent journal, to denounce imposition and humbug in horticultural matters whenever it comes to our notice. We believe the 'Main Seedling' or 'Main Grape' to be the Concord, notwithstanding the rose-colored advertisements that have from time to time been published, and so remarked to our friends. To better satisfy ourselves, we bought a vine of a well known nursery firm of this city, who had vines of Mr. Main, and we are confirmed in our opinion. A nurseryman and large grape grower said to us the other day, that he would furnish the 'Main Grape' by the hundred or thousand at a low price, as he had plenty of Concord vines on hand. Varieties that have not been fully indorsed by some competent committee of pomologists should be looked upon with suspicion.—ED."]

This, of course, was not agreeable to the owner of the "Main Grape," for he had been at great expense within a year previous in erecting a large propagating house for growing his vines, and had increased his stock to a number of thousands, ready for the fall trade. If the article and remarks upon it were believed, it would injure the sale of the vines very much, for the journal claimed to have a "circulation larger than all other Horticultural Magazines combined," therefore, something must be done. An advocate was "retained to defend the "Main Grape," so I was informed by the person thus retained. A communication was sent to the publishers of the journal, but for some reason was not published. The retained agent then sent a person to see the publishers about the business; the result was, "the publishers made it all right, and promised not to publish any more communications about the grape from either side, but they would advertise the grape as much as its owner desired," so I was told by the agent himself.

I could not believe that the publishers of an "independent journal" whose "aim was to devlope the truth" would make such a promise as this. I thought there must be some misunderstanding. I am sorry to say, that from what was afterwards published in the journal, I was compelled to think that I was mistaken myself.

Only a few days before this promise was said to have been made, the transactions of the Massachusetts Horticultural Society for 1867, were published, in which will be found the following extract from the report of the committee on fruits:

"The 'Main Grape,' so called, was received from several sources, from vines sold by Mr. Main. The fruit and foliage so exactly correspond with the Concord, there can be no doubt of its identity. After receiving a good deal of evidence, your committee is compelled to say that this sale of the Concord under a new name is a gross outrage upon the public."

That the publishers of this "high toned journal" knew of this report, and what it contained in relation to the Main Grape, is evident, from the fact that the number of the journal for March, 1868, pages 183 to 187, contains the entire report with the exception of what is said upon the grape, and three or four other short paragraphs. *All that is said in the reports about grapes, including the above extract, is suppressed.* Now why should the report be mutilated in this way? Had the grape fever come to an end by a sudden death? One would not think so from the advertisements in this same journal. Turn-

ing to page 30 of the advertising sheets of this same number we find this advertisement:

"THE MAIN GRAPE.—The finest Grape that is now grown in the United States for domestic use. See advertisement."

Turning to page 45 of the same advertising sheet we find the whole page occupied with reading matter and a cut of the "Main Grape." Turn again to page 3 of the special advertising sheets, and we find half of the page occupied with a report of a committee about the "Main Grape." Is not this advertising as much as the owner of the Main Grape would be likely to desire in one number of the journal? Does this account for the mutilation of the report of the Massachusetts Horticultural Society? I leave the matter for every one to form their own opinion.

GRAPE NOTES FROM THE PARSONAGE.

BY W. H. W., READING, MASS.

After another year's experience in the garden culture of many varieties of the native grape, I will comply with your request and give your readers the benefit of what facts I have discovered. The season here in New England has been quite backward in consequence of the cold and rainy spring; but on the whole, very much better than that of 1867. Then mildew and rot abounded on every side. But this year I have not seen a dozen rotten berries in my garden, and not the slightest trace of mildew upon any but a single vine. The behavior of some of the different varieties has been as follows:

1. *Delaware.*—I put this first, because in my experience it stands at the head of the entire list. The secret of success with it seems to be high culture. No other vine in my grounds has borne this year so abundantly as the Delaware, and the clusters and berries were, very many of them, as large as ordinary Dianas. In the spring of '67 I applied to one vine a *wheel-barrow load of hen manure*, spreading it six or eight feet from the stem, and this vine presented this year one of the most splendid displays of fruit that ever gladdened a gardener's eyes. If I could have but one variety of grape it would certainly be the Delaware.

2. *Diana.*—Strong growth, entirely healthy, but not so fruitful this year as usual. This is probably the result of mildew last year; but what fruit it has borne has ripened with remarkable uniformity and deliciousness. It is very nearly, if not quite as good, to my taste, as the Delaware.

3. *Rogers' Hybrid No.* 15.—There is no other variety in my collection that has so improved upon acquaintance as this. When it first fruited I thought seriously of digging it up and throwing it away. And in my last year's report I said, "How Mr. R. can consider this the best of his hybrids (except Salem), I am at a loss to understand." But I understand it now. It has this year seemed almost like a new grape. My family and very many of my friends have pronounced it *the best grape in my garden.* It is a very strong grower, and is an abundant bearer of fine large clusters and berries. I found perhaps half a dozen rotten berries upon the vine, but with this exception it has shown not the slightest indication of disease. I advise all my friends to plant Rogers' 15, as I shall certainly plant more myself. It is, as Mr. R. says, the best of his hybrids.

4. *Iona.*—I have been disappointed in the opposite direction with this variety. Last year I spoke very favorably and hopefully of it; but this year, truth requires me to give a different report. *It has proved much later than I hoped.* standing on the south side of my house, on a bank three feet high and ten feet wide, it was not nearly ripe, October 17th. Diana and Union Village on the same trellis were both in advance of it, the former fully ripe. In quality it is all that could be desired; and it has the same peculiarity as the Diana, of being very eatable long before maturity. Indeed the most palatable grape I could find on the 1st of September was an occasional Iona. I most fervently hope that it may yet prove a much earlier grape than my experience this year would lead me to expect. If so, it will prove invaluable. Healthy and productive on good strong soil, but it needs high culture like the Delaware planted in '63.

5. *Israella.*—This is the first season that I have been able to make the Israella grow with any vigor. My vines have not yet borne; but a friend gave me a few fine bunches from which I obtained an entirely new impression of the quality of the grape. It has a peculiar twang, which to me is *decidedly offensive.* If this is its uniform characteristic, one vine of Israella will be quite as much, if not more, than I shall want. But Rogers' 15 has taught me patience and hopefulness in regard to any grape so highly praised by good judges as Israella.

6. *Arnold's Hybrids Nos.* 1, 2, 5, 8, and 16.—These new candidates for public favor have all shown entire healthiness and vigorous growth. No. 2, or *Cornucopia*, is the only one of my own vines which has yet shown fruit. This bore two small bunches, but the birds, for some unaccountable reason, helped themselves to nearly every berry, while Delawares at their side were untouched. But Mr. Arnold sent me specimens of all five varieties from Canada; they were all *fully ripe* September 20. I was more pleased with their quality than last year. They have no perceptible pulp, and are very spirited and juicy. Several amateurs, to whom a few grapes of each variety were given, were unanimous and emphatic in commendation of their quality. Rev. H. W. Beecher says of them, "If I could have but one variety, I should take No. 8," (I should say No. 16,) *but with the express understanding that No 5 should go with it.* From my present knowledge I consider them some of the most promising grapes now before the public.

7. *Fedora.*—This is a new seedling, probably from the Chasselas. The vine needs winter protection like Allen's Hybrid. It is a white grape of very fine quality, superior to Rebecca, and some good judges have said superior to Delaware. The berries are about the same size as Allen's Hybrid, but the bunches are from six to eight inches in length. The leaf is exceedingly beautiful, plainly showing vinifera blood, but it has never been seriously affected with mildew during the five or six years I have grown it. It ripens about with the Delaware, and is a most abundant bearer. It requires good soil and generous culture, and will then most richly repay its owners care.

8. *Queen of Sheba.*—This is another aspirant for the crown. I have never seen the fruit, but an experienced amateur in Connecticut, who is familiar with all our best varieties, tells me, that in color and flavor it is almost identical with the Delaware; while in healthiness and vigor of vine, and size of bunch and berry, it is much more like the Concord. My vine, set this spring, has grown very vigorously, and appeared in all respects as well as any one could desire. If the fruit is indeed as large and fine as my friend considers it, (and he has seen and tasted it and is thoroughly competent to judge,) then we shall have found a treasure indeed.

9. *Eumelan.*—This is Dr. Grant's new protege. The vine was set last spring, and has made a very strong and entirely healthy growth. The wood is very short jointed and has a decidedly foreign appearance. The fruit, (sent me by Dr. G.,) is very delicate and high-flavored, reminding one very strongly of one or two of Arnold's Hybrids. If the Eumelan shall ripen as early as is represented, it will prove a very valuable addition to our list of hardy grapes.

I have quite a number of other and new varieties, Challenge, Conquerer, Diana Hamburgh, Hine, Weehawken, Saratoga, Fancher, &c., &c., but my article is already too long, and as nearly all of these are still too young to have developed any special characteristics, I will defer my report upon them until next fall.

ARTIFICIAL IMPREGNATION.

BY JOHN L. RUSSELL.

In some interesting remarks on Mr. M. P. Wilder's paper on Japan Lilies, you state as your belief, Mr. Editor, that the Golden Bell, or *Forsythia viridissima*, produces no seed vessel unless by impregnation of foreign pollen.

Six or seven years ago I plucked several fine ripe pods from a large plant growing remote from any other of the same or other species, and which must have perfected its seeds unaided. The incident is perhaps trifling in itself, but has some bearing on infertile conditions of cultivated and even wild plants, or those supposed to be so.

The successful impregnation of Passiflora cœrulea not only by Disemma, but by P. coccinea and two or three other species was effected by John Scott, of the Edinburg Botanical Garden, and a translation of the account may be found in one of the late volumes of the "Annales des Sciences Naturelles," of Paris, France.

I have always been struck with the resemblance of Lilium tigrinum to L. lancifolium or Japan lilies, and am by no means surprised by President Wilder's success. I do not remember, however, of seeing a ripe pod of the Tiger lily from its own impregnation, but your better experience may suggest many. My friend Wm. C. Harding, of Boston, kindly presented me with a fine, plump pod of L. lancifolium impregnated by L. auratum; but I am assured that this latter lily crosses very unwillingly with L. candidum and some others. My success in impregnating the stigmas of *Pœonia officinalis* flore pleno, with the abundant pollen of several single kinds has been uniform and gratifying.

The impregnation of L. lancifolium rubrum

with Gloriosa superba, while interesting, only confirms the suspicion of many botanists that this splendid flower is one of the Tulipea, an order of the Lilies, and closely allied, although Lindley thinks that it hardly belongs there. But as I am informed, the young plants grow very slowly, as if hesitating about the legitimacy of their origin, and protesting against the act which brought them into being.

The impotent nature of the pollen grains of cultivated plants, especially varieties, should never surprise any student of philosophy, seeing that cultivation not only can change stamens into petals, but deprive fruits of seeds altogether, as well as render others destitute of the germinating power, as in the Fuchsias, sometimes ; and to seek for healthier and more vitalizing pollen is as philosophical as it is wise in the reproduction of valuable kinds of plants.

[We have no recollection of seeing a seed vessel on Lilium tigrinum.

Our *Forsythia viridissima* impregnated with *L. suspensa*, matured their seed vessels, and were filled with large wingless seeds, much resembling grains of white wheat ; but on dissection found they were filled with a dry powdery matter, and worthless for germinating purposes. It would be interesting to know whether Mr. Russell's plant perfected, or only apparently perfected its seeds. We are more puzzled than ever about the matter. With some two hundred Forsythias side by side covered with blossoms, and many score of flowers on the plants from which we took the pods, yet the only ones produced were those on which the pollen of L. suspensa were used. It is fair to suppose it had an influence, yet how account for the imperfect seeds? —Ed.]

REMOVING OLD PUTTY.

BY VITIS.

Those who have plant houses, frames, &c., know how difficult it is to remove old putty from sashes without injuring the sash. I have seen it stated in some journal, that it could be removed very easy by applying a hot iron to it. I tried the experiment a few days ago for the first time, and was quite surprised to find how easily the most indurate old putty could be cut out after being well warmed up by the application of a red hot iron. Try it.

SCUPPERNONG WINE.

BY J. M. D. MILLER, IUKA, MISS.

Permit me to correct a serious error of the printer, in your March number, where I am made to say that "a *quart* of brandy and sugar are added to each gallon of juice." I wrote, "a *part* of brandy and sugar."

This is a very material difference ; yet I would not have alluded to it, believing the reader would see the error, had you not quoted it. in your last number, in your editorial on my Scuppernong article. Besides, when writing this, I had my mind on ordinary home-made wine,—of Blackberries, Muscadines, Elderberries, &c., as well as the Scuppernong—and wrote only for the masses ; and was, consequently, as brief as possible.

I now beg leave to say, that I do not *recommend* whisky or apple brandy in any way, for any purpose, having never used either, at home or abroad, under any circumstances ; and would here say that this mode of making it has my most emphatic condemnation—and would substitute, at present, the following formula :

For sparkling Scuppernong, add 2 oz. of the syrup of double refined loaf sugar, and 2 oz. of Scuppernong brandy, graduated *liquid measure*. to each quart bottle, after fermentation. Still wine may be made by adding one pound of best white sugar to each gallon of fresh juice ; or, by adding one pint of the grape brandy to each gallon of the wine, after fermentation has nearly ceased,—say in two weeks from the time of barreling. It may also be made with part sugar and part brandy. I would give the particulars in detail, if I thought it would be of interest to you or your readers.

You wish to know if this great grape will make wine without any adulteration. It will most certainly make a wine, not surpassed by any in America, without any addition to the pure juice of the grape, except a small portion of spirits distilled from the Scuppernong juice itself, obtained from the refuse of the press.

Wine thus made has no taste or flavor, save the Scuppernong, and has oftentimes been pronounced equal to the wines of France and the Rhine—as good Hock, and as fine Santerre, can be made as has ever been made on the Rhine, or in the world. That a grape so sweet, so rich in aroma, and all the properties that constitute a first-rate wine,when fully ripened and judiciously managed, should not make a superb wine,—an

article that, with age, would rival the nectar of the gods—is simply absurd.

J. Van Buren says, "no foaming wines that I have ever seen and tasted can compare, in delicious, honeyed flavor and bouquet, to that made from the Scuppernong."

But you say, "that Northern writers usually consider that only as true wine which is made from the pure juice of the grape." If this be true, and I do not deny it, then I must say that Northern drinkers drink *but little true* wine, either native or foreign. Imported Champagne is never made without additions of saccharine matter in some form or other. Good old Madeira or Sherry contains twenty per cent. of brandy—not grape brandy either.

If Northern writers will show me one gallon of pure grape juice wine, without the addition of any extraneous substance, I will show them 100 gallons with it. It is very pretty, in *theory*, to talk of pure grape wine, but it is not half so palatable, in *practice*, to drink it.

If wine must be only pure grape juice fermented, why not have pure whisky only distilled corn juice ; or pure brandy the juice only of the apple or peach ? Does any sane man pretend to say that pure bacon, pure pork, pure beef and mutton, is half so palatable without any condiment as with it ! How would pure bread, pure tea and pure coffee taste ? Is there one in a thousand who prefers any or all of these eatables pure? Why, then, should they approve of pure grape juice !

The fact is, they do not, and never will. Spice is the variety of life—food and drink must be *spiced:* so must wines. Ask wine makers and liquor manufacturers, how much of the true, unadulterated ever leaves their vaults. Most of American wines is made in Cincinnati, where one of these *usual* Northern writers reside. Let them say for what purpose was built the *grape sugar* factory in their city. What becomes of the tons of grape sugar annually made ? Of course it is not used in their wines : oh, no ! they must have pure, unadulterated grape juice ; nothing else would be wine. And yet every competent wine maker knows that sparkling wines of a high excellence *cannot be made at all without the addition of "liquor" or pure syrup.* Sherry, Malaga, Madeira and "Lachryma Christa," are all adulterated.

Pure fermented grape juice,—Northern writers' imaginary, theoretical, ideal wine,—seldom, if ever, leaves a Portuguese, Spanish or French port. Spanish wines always contain 14 to 17 per cent. of alcohol ; and many of them, also, contain sugar enough to prevent fermentation.

It is to *prevent acetous fermentation* that sugar is added, and not to sweeten the wine of the Scuppernong, as many seem to imagine ; for, of all grapes, it has the sweetest, most delicious honeyed taste. The most celebrated wines of the world owe not their celebrity to the superiority of the grape, so much as to the *superior skill* of the winemakers.

The most celebrated firms of Spain and Portugal add to the fermented juice arrope, or syrup, made by evaporating fresh juice, and spirits distilled from the pomace or refuse of the press. Wine makers of less note, use deodorized spirits, and syrup made of sugar ; and, very frequently, *starch sugar* syrup, because they are less costly than grape syrup and grape spirits. Much, if not nearly all, American wine is made in accordance with this practice. In France and on the Rhine, still wines are made, theoretically, of the fermented juice only ; but practically, some of the best wines are made by intermixing high-flavored sour wines with less flavored sweet ones.

Different wines may be made from the same grape must, by different modes of fermentation. Wine, like most other beverages, is an artificial product. For a long time, a certain celebrated wine, made near Cincinnati, was represented to be pure juice only. Now, it is well known that saccharine was added. The wine and the maker are both highly popular with the wine drinkers, and especially with Northern wine writers,—and they both deserve to be.

A little sweetening is popular in many other respects than in wine. The whole truth is, that many wine writers, North and South, know but little of wine-making, save in theory. I write not for the wine-maker or vinist, but for the masses.

[The "printer" and "proof reader" often come in for a just share of blame for blunders ; we are not so sure that they are always to blame. Our friend, it seems,wrote "a part of brandy,"instead of a "quart of brandy." Now, it is well known that a good proof reader goes by sense. No man always writes his words so plain but that he himself sometimes would fail to decipher a detached sentence. When Horace Greeley wrote "Virtue is its own reward," and the printer set it up "Washing with soap is absurd," no one blamed the printer. Horace himself, were he one of the

craft, could not have made anything else of it,—but the proof reader ought to have known it did not *make sense* with the rest of the paper.

Now, in the present instance, we cannot blame either the printer or proof reader; for, if even the former had set up "part," a proof reader would be most likely, if the "copy" were at all ambiguous, to change it to "quart." However, we are obliged by the correction, whoever caused the error.

With regard to adulterating wines with brandy or whisky, no one denies that it is done. But our friend must not forget that the same "Northern writers who condemn it in the Scuppernong, at the South, condemn it as strenuously in the Catawbas or Concords of the North. They assert that pure wine—let it be one gallon to one hundred, if our friend pleases—is made; we want to know, as a matter of information, whether the Scuppernong will do this?

It may not be out of place to note why this information is important. There is a large class in the community who—though they are not particular whether their tea or coffee is "adulterated with sugar," and so on through our correspondent's list—do believe that drunkenness has caused more misery in the world than ever intoxicating liquors gave happiness. All agree to this, but they are divided into three classes: 1st. Those who think "a man ought to know when he has had enough;" 2d. Those who think many "don't know," and wage a war against alcoholic drinks in every form; 3d. Those who think men can never be made totally to abstain; and who would replace spirituous drinks with pure wine, because it is comparatively harmless.

The writer's sympathy is with the two latter classes. He tried the first years ago, and it was an ignominious failure, although blessed by nature with an iron will. The party opposed to the use of spirits as a drink is so strong, that we are sure wine making never would be so popular as it is now in the United States, only for the widespread belief that, when pure, grape wine will rarely lead to drunkenness.

Sugar in tea *rarely* intoxicates. When used in wine, it becomes rum, and then it does. Cannot our friend perceive the difference? When our correspondent shall have succeeded in proving that a good drinkable wine—pure wine—cannot be made without sugar, brandy, or any other spirituous adulterations, it will be a strong blow against wine making in the United States.—ED]

PURSH'S JOURNAL.

(*Continued.*)

I crossed the Tunkhannock & proceeded on up Martin Creek: on the heath waters of this is the place called Hop bottom, where Mr. Milbourne lives, & where I intended to make some stay, to make excursions for further observations.—all this country has been lately began to be settled, the roads are heavy bad & difficult to pass & so much more to find, as the most of them are only blind paths.—It got evening when I came to Hop bottom creek, & I give up the idea of reaching Mr. Millbourns place, as it was three miles further on: but finding on enquire Mr. Millbourne to be at a house there himself, & just now ready to go to his place, I went there & delivered my letter from Mr. Hart, he offered me his horse to ride to his place but I only accepted of the offer of carrying my wallet on his horse, as I was exceedingly fatigued, & he riding slowly on I made the rest of the road to his house, through a very bad piece of road, full of roots & mire holes, in the dark. He appeared to be a very fine man, though of but little education, yet of a great deal of natural good sense. Mr. Hart had mentioned in his letter, to make me acquainted with the Leek & the Pigeon berry of this country, which he told me he would venture to show me, but thought that both of them were dyed down, as both are the earlyest productions of the season. N. B. The Tiarella cordifolia is as common to this country, as it is to the great swamps of Wilksbarre. They call it here Rough leaf.

26.—This morning I took an excursion accompanied by Mr. Millbourne who wanted to show me the Leek & Pigeon pea, as he calls it. We could not find either of them, though he brought me to places where he said they were found in great plenty. We tore up the ground in several places, & at last succeeded to find some of the roots of the leek; it is a long bulb, of a very strong garlick smell, with a black skin outside; the leaves are broad & long as he says, & appear the earlyest of any thing in this country; it grows in moist, shady places along side the hills, near the bottom of the creeks: I cannot suppose it to be Allium tricocca, as that prefers a rocky situation. By the way in looking for these I observed Streptopus lanuginosus & roseus (:p fl:) Botrypus virginiosus, Scandix dulcis,—Trillium erythrocarpum (:p fl:)—which flowers white & red here, & is calld Bathroot & though to possess great power in diseases of the lungs & liver. Acer montanum, very common through these woods called Elkwood.—Orchis bifolia? This very singulare plant, has without doubt, the handsomest leaf, of any of our natives: the two leaves lay opposite one another flat on the ground, are nearly circulare of a handsome lurid green with darker longitudinal nerves & sometimes 6. inches wide: the underside of those leaves seems to be beset with very minute cristallizations, which when magnified are nearly of the structure of the Ice plant, which gives it a very brilliant appearance. The stock is generally from 12 to 15. inches high, angulated & naked. The spike of flowers is considerable long & loose; the bracte is lanceolate linear, acute, of the same texture as the leaf only finer, & as long as the germes. The germen is lineare & lively green; the corolla silvery white, with a green hue over it, & very open when in full bloom. The 3. outside petals or calyx leaves, are more greenish outside than the rest, the upper one is broad, ovate deltoide, or of a heart shape without sinus, & acuminate, the other two side petals are longer & oblique, seemingly only the half of the shape of the upper one, the three inside petals are narrower, the two upper ones oblonge & acute & oblique on their base: about the length of the upper outside one, the lower one or the labium longer than the rest lineare oblonge & obtuse:—the spur is longer than the germen, & thicker toward the end: the anthers 2. laying in a groove on the upper edge of the nectary or stigma, which seems to be only a continuation of the labium: they are of a clavate form, & at the time of fecundation burst out of their cases, & attach themselves to any part of the flower by way of a kind of clasper or foot on one end which will get hold of any thing. in the same manner as the claspers of Bigonia radicans will do to a wall. This emigration of the anthers is very easely & distinctly seen in this species: Sometimes even the anthers will stick to the stem or the bracteis, or almost any part of the flower: It is almost certain, that it is not possible any impregnation can find place, untile they have burst out of their cases, as they are very close confined there. This plant is called here Allheal or Healall & used by the people in fresh wounds, where it is found the most healing thing, they would wish to have, they use the leaf & suppose one side will draw and the other heal, but I could not learn which sides they were: it is exactly the same talk about the leaf of Erythrorrhiza in Virginia.—The root is fleshy & strong fibrous with an ovate small & white bulb like bud in the centre, for the next year plant.

Mr. Millbourne tolld me, that two years ago, one of his neighbors having himself cut very badly, with an ax applyed to him to get him some of the Healall, but as those leaves had decayed at that season, he took a leaf seemingly allyed to the true one in respect to texture, & succeeded with curing the wound in a very short time; after that he said he thought as much of that plant & more: as the leaves could be got at any season than of the true Healall (Orchis bifolia) when he showed me this leaf, I found it was the same species of Viola I had taken notice to, in Wilkesbarre swamp, with large spreading cordate & very thick fleshy leaves, which growing then in company of a white flowering Violet of another species alltogether, I was mislead to take only for outgrown & old leaves of that same white Viola. But no other Viola leaves appearing in the neighbourhood of those plants, shewn to me by Mr. Millbourne, I began to suspect my error; On examination I found young flower buds & at the same time half formed seed vessels on some of these plants, which brought me to the determination of examining this doubtfull plant more closely & as it grew plenty & near hand: I deferred his examination for another day.—Ginseng was in berries—Uvularia perfoliata & sessilifolia (;p fl) Geum rivale—Sium canadense (:a fl:) Orchis spectablis (p fl:) Urtica spec.—Black & Red Raspberries in flower—The Pigeon berries or Pigeon peas we could not find, untill we returned to the house, where a place was where they commonly grow: in howing up some ground they showed me the roots by which I found them, to be probably nothing else, than the tuberculis of a species of Glycine, resembling marrowfat peas very much: the pigeons scrach them up at certain times of the year & feed upon them very greedyly.

27. The heath waters of Martin creek come out of several ponds laying in the highest part of the beach woods, I was very desirous of seeing them; Mr. Millhouse in expectation of getting some Venison dit go along with me; as there is no road or path leading in particular to those ponds, I was very glad to get him as guide: though I would have been able to find them, it would have taken me a night to stay on the road, which was now unnecessary as he could find a more direct course to them, without following the water, as I would have obliged to do.—We ascended gradually, crossing some of the branches now

& then, on one of which was a very handsome cascade, on whose banks nearly the same plants grew, which I found about the falling springs, at Lawahannock—The Oxalis acetosella frequently occurs here with quite purple flowers, which colour in some instances is quite deep.—Mr. Millbourne made me attentive to a root, which he calls Pepperoot—'Tis a white long & articulated root, creeping on the surface of the ground, under the rotton leaves,& has but one leaf which is three lobed ; I could not find any signs of flowering or any remains of a flower past, on it ; but I suspected it, to be species of Dentaria ; the root especially the young shoots have a very agreeable pungent taste : it grown very plenty here, in shady moist places.—when he came to the first pond, we kept ourselves quiet to watch for deer coming in sight, we seen two, but both out of reach, on the other side of the pond ; here I observed nymphæa lutea & odorata in flower, the latter only beginning to expand ;—Pontedera cordata (a fl:) which I did not expect to find here. Brasenia peltata (:a fl:)—this plant I always had an Idea to be a more Southern one, but it grows here to great perfection. Schoenus cyperoides ? &c.

To be Continued.

EDITORIAL.

GOOD GARDENERS.

Of course every one understands that he who knows his business is the cheapest man to employ ; yet when we look around us and see "gardening" *done*, we often wonder if this good principle is ever acted on in this branch of the public wants. We suppose the reason is that the great public know nothing whatever of gardening practically; hence, a man is a man, and it would seem that the only thing to be done in making a first-class selection, is to higgle about the wages.

We are very sorry for the sake of gardening that something cannot be done to distinguish the really good gardeners from the bad ones. As it is at present, too many good gardeners feel that the chances of any man, irrespective of his abilities, getting a situation, is as good as another, that rather than compete with brazen-faced impudence they leave the profession for other fields. Hence it becomes exceedingly difficult to find good gardeners for good places at the time they are needed; and many gentlemen really capable of appreciating a good one, have to take so many poor ones, that they tire of gardening as a too troublesome luxury.

We happened to see a remarkable contrast recently between two gardeners in different places lifting large trees. It so happened that in both instances the ground had been filled up several feet, and the trees had to be elevated to the new surface. There was not much difference in the size of the trees,—about 3 or 4 feet in circumference, and 25 to 30 feet high.

In one case the "gardener" had six men, and had accomplished a great deal of grubbing about the roots. He had erected a tall triangle of very heavy timbers, expensively bolted together for the occasion, and with block and tackle had all hands tugging away at the rope to see "if she would'nt stir yet." The other gardener had but two men. He had dug a circle all round the tree three feet below the surface, and wide enough to work well. By the aid of a digging fork he very soon had the tree undermined and balanced on a slender column of earth. By the aid of a rope fast to the top of the tree, the latter with its ball of roots was easily drawn over to one side. A little earth was then thrown under, and then drawn back, so as to lean over on the contrary side, then more earth thrown under, and the tree drawn back again. This zigzag mode of leaning over, and gradually filling under was continued until the tree was *self-raised*, as it were, to the surface. In less than one day the job was finished, costing, we are quite sure, less than $5. When we saw the other the day was far spent, and it had not yet "riz." Our calculation was that some thirty dollars would be spent before the job was finished, with slim chances of life afterwards.

We have no doubt the same relative capacity for business is exemplified in all the gardening of both these men. The one is better worth $2000

a year than the other is worth $200, yet we believe both these men have about the same wages. The good one is no more appreciated than the other would be. If the place were vacant, the latter would have as good a chance for it as any other one.

It is clear the only remedy for this state of things, is for gentlemen to inform themselves a ittle more as to what constitutes a good gardener. They already know that the best is by all odds the cheapest. When they are able to distinguish the genuine from the counterfeit, a great step towards true gardening will be made.

TENDRILS OF CUCUMBERS.

In a recent issue of the French *Comptes Rendus*, M. Lestiboudois has a paper on the "Homologies of the tendrils of curcubitacæ," in which he proves that the tendrils in all this tribe of plants, are but modified leaves.

It has been customary in the United States to look on the tendrils of the grape vine as abortive bunches, because sometimes a few flowers are found on them,—but as they grow on shoots which cannot possibly bear fruit, they are most likely but metamorphosed leaves also.

Cassimer De Candolle has recently written a paper, to show that leaves are a changed form of branches,—so that probably the true relation of a tendril, will be between a branch and a leaf,—a sort of skeleton leaf as it were.

A NEW GRAPE DISEASE IN FRANCE.

M. Bazille, presented a memoir to the French Academy on August 3rd, detailing a new disease which he says is likely to prove more disastrous than the famous vine mildew. This new enemy is not a fungus, but a minute *aphide*, which he calls a *Rhizobius*, and which forms yellow parasitic patches on the roots of the grape vine.

RAISED GRAPE BORDERS.

In an Editorial, over a year ago, the *Gardener's Monthly*, pointed out that if we are ever to be a great grape growing people, we must recognize the fact that *the roots can scarcely be kept too dry*,—and that the very best way to accomplish this on flat land, *is to raise the soil above the natural level.*

There are some varieties more impatient of wet than others ; and there are some which disease will attack however healthy ; but the experience of another year has confirmed the great general lesson,—and we have no doubt but that many of the finer kinds of grapes, now already abandoned, might be grown to advantage, if care were given in this respect.

Take for instance the Iona, for the sending out of which so much abuse has been showered on the head of its originator. There is no doubt about its being a grape of the very highest excellence,—as it is equally true that it is more tenderly constituted than perhaps the majority of grapes. The public will be slow to forgive the originator for the attempt to build up his pet at the expense of all other varieties,—but this need not blind us to the fact that it is a first class fruit, wherever it can be obtained ; and is well worth our while to inquire whether there is not some way by which success with this delicious variety may not be fully assured.

We believe that planting it on a dry border would have this effect. We have seen the past year many corroborations of this. In Germantown, Mr. J. Laws, on his dry rotten rock, has had Ionas which have been the wonder of the place, and just pride of the grower. Others in the regular way have failed with it, though Concords along side have done well, so also we find in other places.

On this subject we have the following from a well known correspondent in Dubuque. We value it particularly because it is written in a truth loving style, anxious only for the facts ; and to ascertain the true causes for the facts ; a spirit rarely shown by writers who generally make too much haste to praise or to condemn. T. J. P. says :

"Mr. Editor, your correspondent in the November number, J. K., of Dubuque, Iowa, who we recognize as no other than "Judge King" of Dubuque, a practical *fruit* grower, and vineyardist, in "*agonizing*" over his failures with the "Iona Grape, has our profound sympathy. I have the Iona three years planted, no fruit yet, and but small feeble growth ; am improving the vines by "layering" the new wood to increase the roots.

But a neighbor of mine has one "Iona" vine, three years planted on a "*raised border*," on the south side of his house, that this year bore four very large nice clusters eight to nine inches in length, (though rather loose,) they are truly worthy of "*praise*." That the Iona is a good grape needs but to be seen and tasted. That it

can be grown and fruited, is just as certain and plain."

We may observe that our correspondent took the wrong course to strengthen his vine by layering it, if he took the layers off after rooting. If he leave them attached to the mother plant it will be a benefit.

ORIGIN OF FRUITS.

Prof. Karl Koch of Berlin, in a recent paper before the Norwich meeting for the advancement of Science, has proved that the almond *is* the parent of the Peach, as has long been supposed. He did not believe the Green Gage Plum was derived from the same parent as the Damson and ordinary Plums,— he thought it came from a distinct species. He thought all the cultivated cherries came from one species.

CALLOUSING CUTTINGS.

It is strange that so many should write to us as they do, that they do not know why it is that their cuttings seem to "callous" well, and yet die afterwards.

It should be generally known by this time that the two operations of callousing and rooting are entirely distinct, and have no connection one with another. There is therefore nothing surprising in the fact that many cuttings which callous easily, should not yet root.

Callousing is rather a bark forming process. It is an effort of nature to repair an injury. It is a cellular out-growth,—the roots springing from the woody system of the tree.

In so far as the callousing process indicates a vigorous vital activity, it affords good evidence for expecting roots; for if there is no sign of bark healing, the vital principle is very low. Again, in many cases, from some peculiarity of the plant's structure not yet understood, many plants will rather push their young roots though the soft cellular matter of the callous than through the bark. But this is not by any means the rule, as a large number, probably the majority of plants, will root out of any part of the bark, as well as through the injured part which is healing, and termed the "callus."

We supposed this matter was better understood; but we have recently read in some new books of very high pretensions and really intelligent treatment of their subjects generally, directions which show their authors know nothing about this. Rules are laid down for callousing as if it were identical with rooting; and operations made dependent on the one, which really have reference to the other.

We have societies for the advancement of science, and many other societies of practical value; but another is badly wanted, namely one to keep continually before book writers all the ascertained truths that science has already found.

NATURAL INARCHING.

It is often a matter for astonishment how trees can inarch their branches together as they often do in their native woods. The winds are constantly swaying them to and fro, and one would think they would be still scarcely long enough to unite. If this motion was *constant* they could not of course grow together. But the union is all accomplished within ten days or so, during the most active time of the new wood formation, which is about the end of June. At this time there is often stillness for this length of time. Union is very rapid when it goes on; and the strength so soon after adhesion is one of the wonders of nature. We have often tried a strong Pear and on a vigorous Quince within a week after "budding," when it has been impossible to draw it off the Quince without tearing it to pieces, —remembering this, one can understand how easy it is for these inarches to take place, if together just at the right time.

SCRAPS AND QUERIES.

Late Flowering Fruit Trees—Dr. Holbrook, Editor *Herald of Health*, says: "The *Gardener's Monthly* contains a query from one of its readers, as follows: 'Is there any way to prevent apple blossoms being destroyed by early spring frosts,' to which the editor of the *Monthly* makes this relpy: 'Plant late blooming varieties is the surest remedy. In this vicinity, Raule's Janet often bears when others do not, because its late flowers escape.'

The evil for which a remedy is asked is a very wide-spread one, and if there is any remedy, whoever discovers it will be a great benefactor to the fruit-growing public. We have had in our mind for many years a remedy which, it seems to us, will prove efficacious. It was suggested by the following facts: Many years ago, a severe frost occurred on the night of June 4th, killing the wheat, corn, and fruit over a large extent of our Western country. On that night, in an orchard, a cow happened to be lying under a large apple tree. The fruit on that tree was saved, while on all the others in the orchard except it was killed. The warmth from the cow's body and breath, rising into the tree and spreading among the leaves and branches, kept the temperature elevated above the freezing point. A hog lying under a pear tree saved the fruit on it. Now from these facts we draw this conclusion. The heat generated from this cow was not more than would be generated in open air by the burning of a few pounds of grass, or a small amount of grain. The only point was to so plan it, that the heat should be formed in the right quantity, and distributed evenly during the night. A little experimenting showed that this could be best accomplished by placing under each tree at the time required burning kerosene lamps, boxed up so as to be safe from wind or accident. We have not had the opportunity to decide just how much kerosene or other fluid will be required, but certainly not enough to be very expensive. A little skill and experience would fix this question. Perhaps two lamps might sometimes be required, or perhaps it would be better still to have one made on purpose. We know it will work and we give the hint, hoping that it will be tested thoroughly."

Suspension of Hovey's Magazine.—We find in the *Boston Journal* the following notice of a combination extraordinary:

"It will be seen, by an advertisement in another column, that the two magazines now known as *The American Journal of Horticulture* and *Hovey's Magazine of Horticulture* will, after this year, be consolidated, with the name of *Tilton's Journal of Horticulture and Floral Magazine.*

Hovey's Magazine was first published in January, 1835, and has been continued, by its present editor and proprietor, up to the present time. We believe it was the first journal devoted to horticulture ever published in this country, and it has lived to see the rise and fall of many others which have attempted the same field. It has exerted an influence and power in the horticultural world which may never again be held by one man. It has reached an age which is seldom attained by journals in this country under one management; and now that the cause for which Mr. Hovey has labored so long and advanced so materially, has grown into a power affecting the whole country, he feels that the press of other duties and other cares, which his large and ever-increasing business brings upon him will be an excuse for resigning this work into younger hands —and this leads us to speak of its successor,— *Tilton's Journal of Horticulture*, the organ which Mr. Hovey has chosen to carry on his good work.

This journal appeared with its first number in January, 1867, and came into the field with the energy and prescience of success. It has struck out new ideas and opened new paths; it has adopted a plan which, we believe has never been followed by any other horticultural magazine in America, viz.: giving original illustrations of new fruits, flowers and vegetables; it gave the first illustration of the Early Rose Potato, which has since become so famous; and in the space of two years it has gained a circulation larger than all other horticultural magazines combined; and now that this, the youngest of horticultural magazines, has become united with the oldest, increasing its circulation by many thousands, we predict a success for the new journal which the energy and determination of its editors and publishers deserve

It will be well to state here that the publishers of the *Journal*, Messrs. Tilton & Co., have purchased of Col. Wilder the entire stock of his new seedling Strawberry, "President Wilder," and which is said to be the best Strawberry yet produced in this country, which they propose to give to their subscribers of 1869,—thus endorsing the new magazine with the two highest names in horticulture, Marshall P. Wilder and Chas. M. Hovey."

[Some one one will have to hold our Boston friends or they will assuredly hurt themselves. What with "extraordinary" combinations, their "new ideas," and "new paths;"—the happy invention, the wonderful invention, the "extraordinary" invention of "giving original illustrations," "never followed by any other horticultural magazine;" the "first illustration of the Early Rose Potato, which since (and, *consequently*, of course,) became so famous:" the "circulation

larger than all other horticultural magazines combined; the increasing this already wonderful circulation "many thousands" (upon thousands) by this "extraordinary combination," is all truly wonderful. We miss the "enormous" price paid for the Strawberry!!

Well, we are sorry to miss Hovey's Magazine from our exchange table, and trust the "extraordinary combination" may lead to improvements in our contemporary's manners, when we shall cordially rejoice at its success, as we do of all our other fellow laborers in husbandry.]

Effect of Altitude on Fruit Growing.—*D. M., Green Hill, Carlisle, Penna.*, says: "I have been exploring the Blue Ridge range of Mountains, to find a place where most of our fruits would do well. The result is, I have found fertile soil, of good body and pretty deep, which, from my observation and judgment, would grow Grapes, Peaches, Cherries and berries. As to Apples, there are old trees on it about 2 feet in diameter, planted I could not tell how long ago, as it has been closed up and neglected perhaps half a century, on account of its inconvenience for agricultural purposes, and no one ever thought of fruit.

There are some 50 acres of arable and cleared land on the summit of this part of the Blue Ridge, at an altitude of somewhere between 700 and 1000 feet above the Cumberland Valley. I would put it at 800 feet. How such soil ever got, or remained there, I cannot say; but it is almost level, or just rolling enough to carry off excess of water, and has some small springs near the summit.

Now, we know that altitude holds the snow perpetually in some of our extremely lofty mountains, and the question I wish to ask is, whether, in your judgment, this altitude would bring any degree of chilling atmosphere injurious to fruit? I would have thought that during our extremely cold, calm winter nights, it would not drop mercury near so low as in the valley, but thought, perhaps, that running up to this extreme, might change the matter; hence, write you on the subject.

If 800 feet would give a temperature in the proportion that 50 feet does, Peach, Raspberries, &c., would never suffer on the mountain. I will yet add that the North and West is somewhat sheltered by standing forests, which I would purchase along and leave as a protection. I have thought that sometimes some of our beautiful and rare Evergreens might be grown there to enliven the lonely spot, where this beautiful Cumberland Valley would lay open to view."

[As a rule, we do not answer letters coming to us in our Editorial capacity, privately; but this being from a personal friend, we have done so, and only publish it here that some one who has had *practical experience* in such matters may favor us with his observations.]

Best Early White Grape.—*T. J. R., Dubuque, Iowa*, asks for "the best (so-called) white Grape, the *earliest, hardiest* and *most prolific*,"

[Limited to these three very good points, we think Martha is the best we have had any experience with.]

Whortleberry Seeds or Plants.—*T. J. R., Dubuque, Iowa*, wants to know where these can be obtained? If any one has them, we shall be glad to announce it in this column.

Pear Leaf Blight.—A correspondent suggests that this fungus, so fatal to young Pear tree raising, will only germinate at a high temperature, and asks the readers of the *Monthly* to note, by thermometrical experiments, next year, the temperature at which the fungus makes its appearance.

Pegging down Roses.—Our agricultural contemporaries are reporting the discovery, "two or three years ago," by a Mr. Jean Sisley, of Lyons, France, that Roses may be grown to great advantage by being pegged down. Mr. S. is rather late with his "discovery." We shall soon hear of some other Frenchman who has "discovered" that the Potato may be grown from pieces of the tubers or cut sets.

A Seed Store Burned.—The old firm of Jones & Ellinwood, of Chicago, was burned out some months ago; but we are happy to learn they are flourishing again at No. 47 State St.

"Steuben."—Recently, under this signature, a correspondent gave our readers some valuable information about Grape lands in Virginia. We have many letters hoping the writer would give some further account of them. Two gentlemen,

Mr. G. T. Robinson, of Neversink, N. J., and Mr. G. Calkins, of Bricksburg, N. J., would be glad to correspond personally with "Steuben," if he has no objection.

Chamberlin's Level.—A correspondent of the London *Gardeners' Chronicle.*, referring to the notice in the *Gardener's Monthly* of this instrument, says:

"Chamberlin's Level.—Being much interested in the measurement of trees, will you allow me to ask 'D. K. K.,' who introduces Chamberlin's Square and Level to our notice, when he uses it for taking the height of trees, for which he says it is so well adapted, what provision is made for unlevel ground? He must know that the point where the angle of 45° strikes the ground may be considerably above or below the base of the tree, and will, consequently, affect the perpendicular height, either by adding to or diminishing, as the case may be. Again, the highest point of an Oak or Elm, 80 or 100 feet high, is not always (I may say never is) perpendicular to the base. This being the case, the measurement will fall short or exceed the true height in exact proportion as the top sighted is distant from the perpendicular. The principle is right, but difficult as applied to trees, and 'D. K. K.' makes no allowance for these contingencies. *S. Wills, Holme Lacy, Hereford, Oct.* 31."

We refer to the matter in case any of our readers should overlook the difficulty suggested by Mr. Wills, though it is scarcely necessary to our readers, as we gave the principle, and an "improvised" method of carrying it out, in our first volume. It will do no harm to repeat, that those using the Level for trees must not always take the trunk for the perpendicular side of the triangle, but the perpendicular of the part of the tree seen as its highest point, which may, at times, be a few feet within the base point of the trunk; also to take the observation from a point level with the base of the tree.

The Seckel Pear.—We often wonder where great "historical facts" come from. *Colman's Rural World* treats its readers to the history of the *Seckel Pear*. The discoverer "kept an old sickle hanging on the tree, and hence called it the Seckel Pear." (!) The wonder is why he did not call it Sickle at once. Of course our readers know that Seckel is the name of an old Philadelphia family.

Price of Rare Seeds.—*Mr. Bull* advertises seed of the new Coleuses at half a dollar a seed. As the seed is "smaller than a grain of mustard," they must be worth their weight in gold,—by so much beating our new potatoes.

Our Late Frontispiece.—We receive numerous congratulations from our subscribers on the liberality of the publishers of the *Gardener's Monthly*, in giving the beautiful colored frontispiece last month. Some think it must have cost an "enormous" price. Perhaps it did; but if our friends will make the *Monthly* known to their acquaintances, we shall feel fully rewarded for the cost.

Mr. Durand, the well-known Botanist, informs us that he has gathered this beautiful mushroom in the vicinity of Philadelphia in past years.

Sparganium ramosum for Budding, &c.—A correspondent of the *Gardeners' Chronicle* finds this the very best material, after cutting and drying like hay, for tying in buds. This is a species of the common Burr Reed, of which we have several species in our swamps. It is a valuable hint.

The Vermont Farmer.—This excellent agricultural newspaper has strengthened itself by the addition of Mr. Horace Hubbard on its editorial staff.

The Eumelan Grape.—We have, from Dr. Grant, a plant of this new variety, which we will, with pleasure, give a "good chance to grow," as requested.

Hollyhock and Pelargonium Fungus.—The Hollyhock fungus is very bad in the United States. It has been found as bad in Australia. Mr. Berkely says another one is parasitic on the Pelargonium in England. He comes to the conclusion which we have recommended so often, namely: whenever any of these fungoid leaves appear, *burn them at once.*

Lonicera brachypoda.—We recently made some remarks on the value of this plant as adapted to making of "lawns," under the shade of trees, where nothing else but Periwinkle will grow. We had some little doubt, while writing

about the identity of the plant with this name, —although it is the one generally adopted,—and we termed it the Lonicera brachypoda *of the gardens.*

We see now that the editor of the London *Gardeners' Chronicle*, believing in some confusion of names, has examined the Kew Herbarium, and finds that what we have always called the *L. flexuosa*, of Thunberg, (Chinese Evergreen Honeysuckle) is not correct, that name belonging to this plant. L. brachypodum is a synonym. We have yet to learn what is the true name of the so-called L. flexuosa of gardens. Probably, like the Hall Honeysuckle, it is but a form of L. japonicum.

Spring in New Zealand, a correspondent of the *Cottage Gardener* says, commences about August 1st. He gives the following list of "spring flowers," which would look odd to see blooming with us about midsummer:

"Jasminum nudiflorum, trained against my house, with some hundreds of yellow flowers opening and fully expanded. Berberis aquifolium, flowers nearly open; Viburnum tinus and V. tinus lucidum, going out of flower, had been in flower all winter. Snowdrops opened their flowers for the first time to-day; yellow Crocuses the same; Hyacinths, nibs just showing color. Upright and spreading Cypress, Virginian Cedar, and Arborvitæ, new male and female flowers nearly expanded, most of them shedding seeds out of the old cones. Botany Bay Myrtle (Veronica), with its beautiful azure blue spikes in flower all winter, in sheltered parts of the garden. Buddlea salvifolia, going out of flower, having been in flower all through the winter. Amaryllis belladonna, and A. belladonna minor, now growing vigorously after flowering profusely late last autumn; Sternbergia lutea and S. Clusiana doing the same. Nerine sarniensis, now producing very healthy leaves, after resting all winter. Yellow Primrose in flower all winter in a warm, sheltered place. Spiræa prunifolia flore pleno, little white flowers, nearly expanded, flowers profusely in this part of the world. Rosemary bushes very full of flower. Pyrus japonica, white and red, now in full flower. Common Box Tree in flower beautifully. Flower buds of Fortune's Double White Peach, Almonds and garden Peach beginning to swell."

Russian Horticulture.—We are indebted to some kind friend in Europe for a programme of the Great International Horticultural Exhibition, to be held by order of the Czar of Russia, on the last of May of the present year, at Moscow. The pamphlet is in Russian and French.

Adulteration of Seeds.—The *Royal Horticultural Society* of England has been investigating the charges of adulteration in seeds. They quietly bought up packages from the leading wholesale houses, and had the packages tested, publishing the proportion of good seeds to bad from each package from each house. In many cases, only ten per cent were good, and very few went over fifty per cent. The most common forms of trickery appear to be that, when a stock on hand is short, and the demand good, some worthless kind is roasted enough to destroy the germ and mixed with a few of the desired thing, —which, of course, is the only lot that grows. The purchaser gets his "pound of seed," but only an ounce or two comes up. These adulterations are defended, on the ground that the public will have the lowest price seeds, and that all have to do "what the others do," in order to be able to sell at all. There are a few, it appears, who sell good seed, and these have, after a struggle at first, found that "Honesty is, after all, the best policy."

Death of a Young Botanist.—Possibly few young men promised a life of greater usefulness to Botanical science, than Mr. Horace Mann, of Cambridge, Mass. Although but 24 years of age, he was possessed of great Scientific intelligence, and was engaged on a *Flora of the Sandwich Islands*, running through the numbers of the Essex Institute Proceedings. We are very sorry to learn from a private letter of his death.

The above notice was written for our last number, but "crowded out," since then we have received several other letters in reference to the decease of Mr. Mann, and have read of the action of several Societies, showing how wide felt is the loss of this estimable young man.

BOOKS, CATALOGUES, &C.

Popular Deciduous and Evergreen Trees and Shrubs; For planting in Parks, Gardens, Cemeteries, &c. By F. R. Elliott, Landscape Gardener and Pomologist: Author of "Western Fruit Book," &c. New York: Published by Francis W. Woodward, office of *Horticulturist.*

We were much pleased with the appearance of this little book; it is got up in the usual handsome style which characterizes all Mr. Woodward's publications. We were much disappointed in the matter. The errors of fact are so numerous—the style so obscure; the grammar—especially the punctuation—so bad, and the engraving so execrable, that we cannot help feeling it would help Mr. Elliott's reputation if he suppress the whole thing.

Mr. E. now has considerable reptutation as an artist—how he could "abide" these engravings is a mystery. What at a rough guess one might take for the Rosemary-leaved Willow, we are told is "Evergreen thorn," and that like a rag weed is "Kalmia"–for "Rhododendron," we have something certainly more like a bunch of Hollyhocks,—another which we took for a little Dwarf Pear Tree as usually seen on Nursery envelopes, we are told is an "Azalea." The Clethra should have been marked Laminated Sea Weed; the Gordon's Currant looks far more like a poor root grafted apple tree blown over. The "Dwarf Horse Chestnut," a fossil Fern—but probably the greatest caricature of all is the "Magnolia purpurea," which must have been sketched from a piece of Sphagnum Moss. Certainly Mr. Elliott is capable of something more creditable than this book indicates.

The Tim Bunker Papers. Orange Judd & Co., New York.

Orange Judd & Co., are doing good service to agriculture. Their *American Agriculturist* is the most popular agricultural journal in the world. The engravings would do credit to the highest pretensions of any art journal.

These Tim Bunker papers, have already "run" through the Magazine, and are now issued in book form. It is an attempt to teach agriculture in a sort of Nasbyish style; by making the errors of old fogy farming appear ridiculous in both language and ideas. We cannot say that we admire this style of teaching; but we have to to remember that it is not intended for a class of readers who are "such as we," but for one with whom it is undoubtedlypopular and instructive. One of the younger members of our household, to whom agriculture is too dry a subject for his tender years as generally presented, reads Tim Bunker with avidity—and we know is receiving thereby the seeds of agricultural love we like to see sown there.

The Wine Makers Manual.—By Charles Reemelin. Robert Clarke & Co., Cincinnati, Ohio.

Mr. Reemelin is well known as the author of the "Wine Dresser's Manual," and other works connected with the grape, which have been received with so much satisfaction, that the author's name will alone guarantee the value of the work. It is a small octavo of 100 pages, and discusses in detail wine making with all classes of fruits.

The Diseases of Sheep; Explained and described, with proper remedies to prevent and cure the same, with an essay on Cattle Epidemics. By Henry Clok, V. S., late veterinary Surgeon in Chief U. S. A. Philadelphia: Published by Claxton, Remsen & Co.

We have perused this little book with much pleasure. Though the author says that one of his objects in writing the book was "to induce a higher opinion of veterinary science and its disciples than hitherto prevailed," there is nothing in it of a technical character—but every thing is told in a plain, understandable style; and is treated in a very common sense manner. It will be found a valuable addition to the country library.

Annual Report of the American Institute for years 1866 and '67.

This active and useful institution issues a volume of transactions equal at least in value and beauty to any in the country,—superior to, and we trust the authorities at Washington will pardon us, the usual volume from the department of Agriculture.

The institution has our thanks for the copy, although now some months delayed.

REPORT ON THE TRIAL OF PLOWS, HELD AT UTICA, N. Y., 1867.

REPORT ON THE RINDERPEST OR CATTLE PLAGUE.

Both of these are published by the New York State Agricultural Society, the most useful institution of this character we have. We are very much obliged to the attentive Secretary, Mr. B. P. Johnson, for these copies.

THE AMERICAN NATURALIST.—This beautiful magazine of Popular Science, is now passing into its second year. The December number has a highly interesting paper on "Bird Eyes,"—the "Striped Turnip Fly,"—"Ferns," by John A. Russell,—Earthquakes,—and the Fauna of Montana Territory, besides many reviews and smaller items of interest to those who like scientific knowledge, but yet abhor dry technicalities It is published at Salem, Mass.,—is four dollars a year, single numbers 35 cents, and clubs much lower; and should be generously supported.

HEARTH AND HOME is a new monthly projected by Messrs. Pettengill, Bates & Co., of New York. Donald G. Mitchell, whose pleasant writings as Ike Marvel, and Mrs. H. Beecher Stowe, are announced as regular contributors.

THE AMERICAN ENTOMOLOGIST for December contains a complete history of the seventeen and thirteen year locusts. It is probably the most intelligent and exhaustive treatise ever before published on the subject.

ELLWANGER AND BARRY'S CATALOGUE OF FRUITS. Very few good descriptive lists have come to our book table, while trade catalogues are so numerous, that we have not been able to note them all. This one of Messrs E. and B. is very valuable to any fruit grower.

NEW AND RARE FRUITS.

REA'S SEEDLING QUINCE.—The *Rural New Yorker* gives an engraving,and says: "The variety we illustrate was originated by JOSEPH REA, Green Co., N. Y. It is a splendid fruit, averaging considerably larger than the apple or orange quince. The quality is good, and the tree a strong grower, with large, dark foliage. In planting for market we should choose this and the orange or apple shaped variety."

THE YELLOW CANADA RASPBERRY is the name given to the variety which has been referred to in our columns as Arnold's No. 1.

THE ISABELLA PEAR.—Was fruited by the raiser Dr. Shurtleff, of Brooklyn, in 1866. The *Journal of Horticulture* says it ripens about the middle of October, continuing about four weeks in eating.

GRIMES' GOLDEN PIPPIN APPLLE.—We have several times during the past few years, had occasion to note the great value of this apple; and some samples recently received from Mr. Mar shall, brings the variety again before us. It is not in our estimation, of the most superior flavor,—and indeed if it were, we should doubt its general value,—for we have to often found these very highly flavored fruits wanting in most other merits which entitle them to general cultivation. But it is of sufficiently high flavor to give it excellence, and in consideration of all its other superior qualities, as a productive bearer, and vigorous grower, it will take rank with our most popular varieties.

WESTBROOK APPLE.—We have the following additional information from Mr. Blodget:

"I was for many years connected with Agricultural Societies, in New York and this State; was a member of the U. S. Agricultural Society, from the beginning, and for some years a member of the Phila. Society. Taking Agricultural journals, several of them, and for more than thirty years in some cases, I know this apple has never been described.

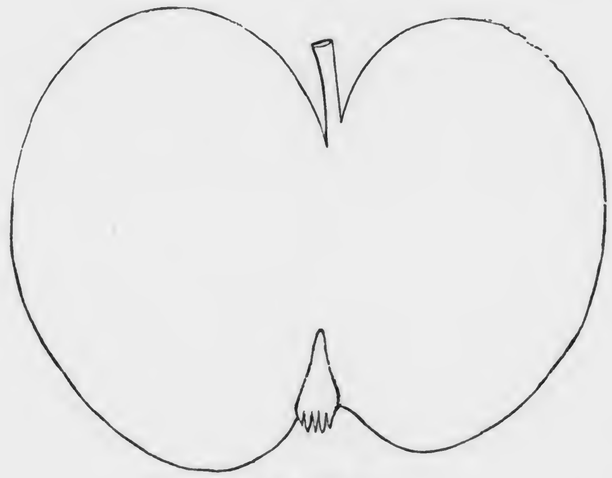
It originated in one of the tributary valleys of the Upper Susquehanna,and was taken by my father, Aba Blodget, to Chatauqua County, New York, about 1820. He grafted a large number of trees in his orchard, now mine; and it was to some extent spread both there and in Ontario Co., N. Y., where several of my family reside."

It would appear from this, that either this is not the same as the Westbrook of Virginia, or else it is an error to suppose the Westbrook is a Virginia apple.

Can Dr. Warder give any information, as we see he includes Westbrook in his list.

We wish to avoid synonyms as much as possible. It is also called the *Speckled*.

THE FANNY APPLE.—A beautiful and excellent summer apple but little known out of the neighborhood where it originated some fifty years since. Dr. J. K. Eshleman of Downingtown, Chester Co., Pa., who brought it to notice, and sent specimens at various times to several pomologists for identification, says that all at first pronounced it Red Astrachan, being somewhat similar to it in appearance, &c., but it has proved a distinct fruit. It is larger in size, of a deeper red color, two weeks later in ripening, and continues a month or more in good condition, and quality equal if not superior. It is a



FANNY APPLE.

showy fruit, valuable for family use, and commands a high price in the market.

The Dr. informs me that the original tree* is still growing near Strasburgh, Lancaster Co., Pa., on property formerly owned by Jacob Beam, and not one hundred yards from the spot where the Gate or Belmont apple originated.

Tree vigorous, healthy, spreading, and very productive, young wood dark grayish brown, downy.

Fruit medium to large, oblate, slightly inclining to conic, obscurely angular; skin deep rich crimson in the sun, and rather indistinctly splashed and striped with light and dark red on the shaded side and moderately sprinkled with light dots and covered with a thin bloom; stalk short and small, inserted in a large deep even cavity; calyx closed; segments short to a point; basin somewhat abrupt, quite deep and uneven; flesh white, sometimes stained next the skin, juicy, tender, with a very pleasant sub-acid flavor; quality very good at least; core small.—C. DOWNING.

*The original tree bears evidence of having been planted in its present position, because it is in a row with three others, all of which are unrecognized varieties.—J. K. E.

THE RULANDER GRAPE—*F. H. F., of Nashville, Tenn., writes*: "Among the various wines shown at the Annual Exhibition of the Tennessee Horticultural Society, none attracted the same interest and attention as the "Rulander," exhibited by George Hussman, of Herman, Mo.,together with a collection of other wines sent by him, but which was received by the Society without any advice as to the exhibitor. A special premium was awarded to the Rulander as the best native wine yet shown. Since then it

has been awarded the first premium by the Wine Grower's Association, over the largest collection of native wines ever before shown in Cincinnati.

Speaking of the "Rulander," Mr. Hussman states, the vine is not very productive, but more than makes up for that deficiency by its other good qualities. While yielding only about 250 gallons of wine to the acre, its exemption from mildew and other diseases would render it a great acquisition for the climate which we think will be favorable for its growth. The first premium for native wines made in this State, was given to Dr. D. German. His method of expressing the juice from the grape (after it had become partly dry) led the committee to believe that sugar had been used but they were satisfied that his Catawba was "very luscious," his Isabella the reverse, and both free from the aid of sugar in making. For Norton's Virginia Mr. Hussman was awarded a certificate; but no other wine exhibited excited the same interest as the Rulander; and we would like to learn further of this, to us new aspirant for public favor, which seems thus quietly to have taken the first place among our native wines.

Golden Champion Grape.—"It is not only a decided novelty, but a novelty of the very highest excellence. Free and robust in growth; hardy and prolific in habit, magnificent both in berry and in cluster, and exquisite in flavor, what more can be desired? In truth, its merits are of so high an order, that they leave little to be wished for.

"The bunch of the Golden Champion is moderately large, compactly-shouldered, and somewhat tapered, with a stout fleshy stalk. The berries are very large, with stout warted footstalks, some 2 inches long, and 3½ inches in circumference; they are generally of an ovate shape, but occasionally somewhat roundish, and they have a thin, pale yellowish green skin, which acquires a rich golden amber tinge with a slight bloom when they are fully ripe. The flesh is tolerably firm, but tender, with few seeds, very rich and juicy, with a flavor which, though compared with that of the Black Hamburgh, is, to our taste, much more saccharine and luscious than that variety, even when grown on the same stock.

"This new Grape supplies, so far as can at present be judged of it, a long-felt desideratum—namely, a high-class free-growing white grape, of hardy constitution, suitable for general cultivation as a companion to that best of all Grapes for general purposes, the Black Hamburgh. It was raised by Mr. W. Thomson, of Dalkeith, some five years since, from a seed taken from a Grape that was itself a cross between the Champion Hamburgh and the Bowood Muscat, and has been freely exhibited during the present year, when, among other awards, it has received a first-class certificate from the Fruit Committee at South Kensington. The foliage is very slightly lobed, and deeply and sharply serrated."—*Florist and Pomologist.*

Joplin's Peaks of Otter Grape.—*Mr. J. Joplin*, sends the following note to the President of Virginia Horticultural Society:

I send you a small package of Joplin's Peaks of Otter grapes, a native grape of the Blue Ridge in Virginia, I have cultivated thirty-five years in my garden and on the farm, on rich low grounds and other places.

I have never had a failure—always had a good crop, and have never known it to mildew or rot, nor any other disease. The vine is a luxurious grower and great bearer. It makes fine wine without the addition of anything. The leaves and other things plainly show it is none of the fox grape species.

The grapes sent are not fully ripe, and would not be under two weeks.—*Exchange.*

Mrs. Pince's Black Muscat Grape.—Will, I think, prove worthy of all that has been advanced in its favor. So convinced am I of its good qualities, that I am planting one house entirely with this variety, and in another house I am planting it alternately with varieties of Hamburghs; so that, should Mrs. Pince realise my present good opinion of it, I may cut away the Hamburghs at some future time. I first saw this Grape growing in Messrs. Pince & Co.'s nursery at Exeter, in June last year. It then promised well, but was evidently overburthened with fruit, and this accounts for its condition as described by Mr. Fish, and in which I found it during a visit I made there last month. The fruit was fairly colored, the flavor delicious; the bunches numerous, but small, and loose. About ten days ago I visited Mr. Meredith's vineyard near here, and was truly surprised with the wonderful Vine which has already been faithfully described in the *Gardeners' Chronicle*; and the thousands of fine healthy young Vines of this variety growing here is a practical proof of the high estimation in which it is held by Mr. Meredith. The bunches on Mr. Meredith's young Vine have much the appearance of well-grown Lady Downe's. Its properties may, I think, be enumerated as follows: the finest and strongest growing Vine in cultivation; very free setter: bunches medium size, berries ditto; color black, with a thin blue bloom; flavor rich Muscat; flesh firm; skin rather thick; the berries on very short stout footstalks. The last properties would indicate it to be, what it has been described as, one of the best late-keeping Grapes known, if not the best. If good for nothing else, it is the best stock grown for working late-keeping and weak-growing varieties upon.—*J. Tyerman, Botanic Garden, Liverpool, in Gardeners' Chronicle.*

NEW AND RARE PLANTS.

Gesnera exoniensis, which Messrs Lucombe, Pince, and Co., of Exeter, are now offering as a novelty, deserves better attention than has hitherto been bestowed upon it; for it is one of the most noble plants of the race to which it belongs, and one of the best winter-flowering plants in cultivation. The figure published as an advertisement of its merits conveys but a poor idea either of the superb velvety leaves or brilliant clusters of scarlet flowers by which, when well grown, this plant is distinguished. When we first met with the plant at the Taunton Flower Show, it was notable for richness of leafage and distinctness of character; but it is in the season of mid-winter and early spring that its merits become most strikingly apparent, the subdued light evidently tending to enhance its vigor and beauty. We strongly recommend this plant to cultivators in need of first-class winter flowers.—*Gardeners' Weekly.*

Acalypha tricolor is a grand decorative and exhibition plant. I have not yet met with any specimen of this equal to my own. My plant which is in a 13-inch pot, is 6 feet through and 4½ feet high, charmingly colored, and is the admiration of every one who has seen it during the past few weeks; it grows very freely—indeed, so freely, that I shall be compelled to cut my plant down, otherwise it will soon be too large to be got through the doorway of the stove. The Editors of the *Gardeners' Chronicle* were quite correct in describing it as a most interesting acquisition to our variegated-leaved plants. This will prove a grand plant for Mr. Gibson's subtropical garden at Battersea Park, its color being so very attractive.—*Edward Bennett, Osberton Hall, Workshop.*

[The leaves of the Acalypha tricolor sent by our correspondent amply bear out his statement. Some of the specimens are almost as brilliant as the leaves of a Liquidambar in autumn, while others have a ruddy bronze tint that is very striking.—Eds. *Gar. Chronicle.*]

Gnaphalium involucratum.—I have used for edgings the hardy *Gnaphalium involucratum*, or ordinary "everlasting flower," with capital effect. I like it much better than *G. lanatum*; it is so much better and easier to manage. I merely take up the old stools in the spring, heel off the shoots when about two inches long, and dibble them in. The result is a first-rate edging, which, for compactness, easy management, and pretty effect, cannot easily be beaten.—Correspondent of *Gardeners' Magazine.*

New Roses for 1868, 1869.—Eugene Verdier recommends: *Tea Roses*—Adrienne Christophie, La Tulipe, Celina Noirey, Marie Ducher, Marie Sisley, Monplaisir. *Hybrid Perpetual*—Andre Leroy d'Angers, Berthe Baron, Charles Fontaine, Devienne Lamy, Dupuy Jamain, Henri Ledechaux, Julia Touvais, Madame de Canrobert, Marquis de Mortemart, Monsieur Journeaux, Rose de la Reine Blanche, Thyra Hammerick, Victor Le Bihan, Victor Trouillard pere. *Hybrid Non-Perpetual*—Madame Lauriol de Barny.

NEW PLANTS at the Royal Horticultural Show at Leicester, last July :

Novelties:—Messrs. Veitch & Son, of Chelsea, London, were the only exhibitors who made a large display of new plants, and the collection from this firm was one of the best specialties of the exhibition. As it comprised several subjects we have not reported on in the account of any former show, we shall transcribe a few of the more important of the notes we made upon them. And first, we must speak of a pair of Nepenthes Rafflesiana, not shown as novelties, of course, but they were most beautifully grown, and were so placed as to be seen to the fullest advantage, the pots being in baskets mounted high upon a sort of ornamental tripod. Thus placed the pitchers hung down all around most elegantly.

Amongst the very new plants occurred a Virginian Creeper, labelled *Ampelopsis Veitchi*, a pretty small-leaved kind, showing in its leafage a number of colors,—tints of blue, light green, and purplish red; what color it will die off in autumn remains to be seen; but in its summer-growing garb it is quite a gem. This was exhibited clinging to a miniature wall, built up in the pot the plant was in, to accommodate its habit of clinging to a rough surface. *Leptopteris superba*, loveliest of ferns, is beginning to be well known; the same may be said of the brilliant *Anthurium Scherzerianum*. The once promising *Dalechampia Roezliana rosea* was shown with scarcely any color. What the deuce is the matter with this plant? Is it ashamed of itself, or frightened of us, that the color goes from its face? *Dracæna regina* is a broad-leaved species, with distinct and bold variegation.

Adiantum concinnum talum is a pretty variety of an old favorite. *Caladium Chelsoni* has curious pale leaves, the margins dusty green, the centres dusty pink or carmine. *Sanchezia nobilis* makes a good plant without flowers, but better perhaps with them. *Croton irregulare* has long, narrow, variable leaves, dark green with yellow stripes. *Croton Hilli* is a fine one, showing a mixture of green, bronze, and deep reddish orange. *Croton maximum* has handsome leaves, ground color vivid green with lemon-yellow midrib and veins. *Croton Veitchi* appears to be the best of Messrs. Veitch's new batch; the leaves are rather long, clean, pleasing ground color, midrib brilliant carmine, the side veins reddish buff, quite new in character and color, a startling subject for exhibition. *Alocasia Jenningsi* is a gem in its class, the leaf most elegant in form, like a green shield, with jet-black quarterings. *Begonia Veitchi*, with lively red flowers, stood the frost last winter out of doors at Chelsea, no severe test certainly, but something for a Begonia. *Adiantum rubellum* is a lovely novelty, surpassing A. tinctum, A. fulvum, and all the rest of the rosy-tinted maidenhair ferns, for it is of short neat growth, and almost every frond, young and old, is tinged with a soft rosy bronze color; a batch of new *Coleus*, a bit of *Gymnogramma Pearci*, and a lovely lot of *Dionœa muscipula*, made up as pleasing a group as any in the exhibition.

Orchids were of course, few, but such as were shown were acceptable. A splendid group came from Mr. Warner, gardener to A. Turner, Esq., of Leicester, comprising Dendrobium chrysotoxum, Aerides affine, Aerides odoratum majus, a gigantic specimen of Vanda teres, in beautiful condition, and with about sixty flowers; Saccolabium guttatum, with ten spikes; Cattleya Leopoldi, Aerides affine rubrum. A beautiful group of twelve came from Mr. B. S. Williams, of London, comprising Lælia Schilleriana, Phalænopsis roseum, Cattleya labiata, with thirteen flowers; Aerides quinquevulnerum, the curious and beautiful gold-lace orchid Dendrochilum filiforme, with twenty-five spikes of its trembling filigree flowers; Cypripedium barbatum superbum, fine. From Mr. Williams came a splendid group of six, comprising Odontoglossum caudatum, the distinct and peculiar Cypripedium superbiens, the peculiar Odontoglossum Schlieperianum, with lively greenish-yellow flowers; Anguloa Ruckeri, Vanda suavis. Mr. Baines, gardener to H. L. Nichols, Esq., Bowdon, presented pretty small plants of the ever-acceptable Calanthe veratrifolia, Cypripedium barbatum, Oncidium flexuosum, Cattleya intermedium.

Exotic Ferns were shown in abundance, and amongst the collections were several that could scarcely be surpassed in any part of the country. E. J. Lowe, Esq., took Mr. Turner's prize for the best six greenhouse ferns, with beautiful examples of Lomaria gibba, Asplenium fabianum, A. lucidum, A. axillare, Neottopteris australasica, Pteris Kingiana. The second prize, given by J. Baines, Esq., was taken by Mr. Burnett, gardener to Thomas Goaby, Esq., Hinckley, with neat and good plants of Dicksonia antarctica, Hypolepis repens, Platycerium alcicorne, Pteris scaberula, Lomaria gibba, Gymnogramma chrysophylla. In the general prize list there was a good competition. Mr. Bolton, gardener to W. Worswick, Esq., had a pretty nine, consisting of Dicksonia antarctica, Cibotium glaucescens, Adiantum trapeziforme, Stenochlæna scandens, finely done; Phlebodium sporodocarpum, Blechnum corcovadense, Adiantum cuneatum, A. formosa, Lomaria gibba. From Mr. Moore, gardener to E. Corah, Esq., came Onoclea sensibilis (scarcely a greenhouse fern, but we will not split hairs about it), Blechnum braziliense, Cyrtomium falcatum. Mr. Charlesworth presented a fine Lomaria gibba, Adiantum concinnum, A. trapeziforme, Stenochlæna scandens, Blechnum corcovadense, &c. Mr. Lambert sent Pteris longifolia, P. argyrea, Blechnum occidentale, &c. Mr. Lowe sent Woodwardia radicans, Pteris serrulata conspicua, with broader pinnules than the species; Gymnogramma pulchella, Osmunda Claytoniana (questionable if a greenhouse fern), Lygodium scandens, Dicksonia antarctica, Phlebodium sporodocarpum, &c.

In the class for tree ferns, Mr. B. S. Williams contributed a remarkably fine pair of Dicksonia antarctica, with tall straight stems; and a good pair of the same came from Mr. McLeau, the head gardener of Donnington Park. Of Lycopodiums there were two good collections; one from Mr. T. Charlesworth, of Westbridge, Leicester, comprised effective pyramid specimens of Denticulatum, Cæsium, Cæsium arboreum, Caulescens, Formosum, and the variegated Denticulata, which now is of a light green color slightly paler at the points, but in winter is quite white at the points. The other group came from Mr. J. Bolton, gardener to W. Worswick, Esq., Leicester. It comprised Erecta, Denticulata, Cæsium, Stoloniferi, Wildenovi, and Erecta compacta.

DOMESTIC INTELLIGENCE.

WINE GRAPE FOR THE SOUTH.—Mr. Van Buren says in the *Southern Cultivator:*

"In reply to the enquiries of "Hibernicus," we would advise the planting of the Hartford Prolific, Perkins, Concord, Scuppernong and Thomas Grape vines to form an arbor, ripening in succession from July to October.—The Scuppernong is a large white grape, ripening in September. The Thomas grape is a seedling from the Scuppernong, and ripens earlier, we are informed, and of black color. The Flowers is also a seedling from the Scuppernong—ripens near a month later. The berry is smaller and sweeter and the clusters larger than its parent."

A CURIOUS TREE.—Under this head the *Richmond Whig*, says: a wonderful thing has sprung up in "Lipscomb's store yard," as rapid as Jack's Bean Stalk; and none of the curious know it. They have no doubt caught a Paulownia.

GRAPE DISEASE IN THE SOUTH.—The *Southern Ruralist* says: in Alabama "each one" of the newer grapes introduced the few past years, rot as bad as Catawba,—that kind is as successful on the average as any of them.

The Ohio Farmer, comes out now in a neat paper cover, and has added Mr Blakelee to its already strong Editoral columns.

THE MOTTLED GRAPE.—Mr. F. R, Elliott, says, will rank with Diana, as a first-class keeping grape. It originated with Charles Carpenter, of Kelley's Island.

NATURAL PHOSPHATES IN SOUTH CAROLINA.—The cretaceous deposits along the coast of South Carolina, have been found of great value in agriculture. They underlie the surface in layers of from 6 inches, to 12 feet thick, and extend forty or fifty miles inland.

A VALUABLE NEW POTATO.—Mr. A. S. Fuller in the *Sun*, says: a friend of his has the "whole stock" of a grand new thing, that he dont want to sell at so low a price as $50, a tuber; but is willing to do so by way of accomodation to "a few" of his friends.

GRAPES NEAR HAMMONDSPORT, N. Y.—Mr. M. M. Pomeroy, writing to his *La Crosse Democrat*, gives a glowing account of the great success of vine culture in this region. The dry gravelly hill-sides, not worth $20, per acre a few years back, are now scarce in the market at $200, per acre. There are about 4000 acres in grapes; they yield about 2½ tons to the acre, and bring the growers from nine to fifteen cents per pound, an average of years shows an average cost of raising them at five cents per pound. Of the millions of bottles of wine made here, Mr. Pomeroy, guarantees they are all the pure juice of the grape.

FOREIGN INTELLIGENCE.

CULTURE OF CONIFERS.—As regards culture of Conifers, Mr. Frost's practice is to top-dress with old potting soil, the refuse of the flower garden when well rotten, or some mixture of that sort. This applied occasionally he finds to greatly improve the trees. In planting he always digs the hole in which the tree is to be put 3 feet deep, and fills up 3 feet above the ground level. There is therefore 6 feet of soil, which leaves the plant on a knoll, and by supplying material for top-dressings, the knoll in time gradually slopes off to nothing. The subsoil at Dropmore is for the most part a rocky gravel, and befor planting as many as 50 cartloads of bad material are sometimes removed from one hole, and replaced with a still larger amount of rough sods obtained from the roadsides or elsewhere—"the rougher the better," says Mr. Frost, who adds that "under these conditions the trees keep in exceedingly fine health." As to planting, he has done that at all times of the year; but he prefers October, or early March, to any other period for the operation.—*Gardener's Chronicle.*

THE BLUE AMARYLLIS.—It may interest you and some of your readers to know that the Blue Amaryllis, sold under the name of *Empress de Brazils*, is now in bloom in this place. The plant is about thirty inches above the top of the pot, and presents the appearance of a huge stiff-necked onion, being twenty-four inches to the top of the bulb or stem; at that height above the pot there is a cluster of light pea-green flag-shaped leaves which hang down on each side, curving gracefully towards the pot. From the centre of these leaves rises the flower-stem, which is about twelve inches in length, and bearing in this instance one flower. Three of the petals are long and sharp-pointed, and three comparatively short, and terminate abruptly. The former are six inches, and the latter four and half in length, and are rather more than an inch across the widest part. The color is a beautiful light blue, not much unlike Clematis lanuginosa, gradually becoming paler as it approaches the centre of the bloom, and pure white at the base. Could you, or any of your correspondents, say whether it has previously flowered in this country?—THOMAS JONES, Gardener to J. E. Taylor, Esq., Rusholme, Manchester.

[We believe this is the first instance of the flowering of the Blue Amaryllis in this country. We saw Mr. Jones's plant at the Leicester Show, and it struck us as being more curious than beautiful, but likely to prove of the utmost value to cross with other species, with a view to the enlargement of the range of colors.—ED. *English Gardener's Magazine.*]

WINDOW PLANTS.—A correspondent of the London *Gardener's Weekly*, gives the following advice.

The first thing to be attended to is procuring proper plants; and as there are many which would defy the skill of the most experienced gardener to keep any length of time in health in unfavorable situations, a list of plants is given, the most suitable for the purpose of window cultivation, being easily obtained and not difficult to manage:—

Calceolarias	Petunias
Canary Creeper	Pansies
Canterbury Bell	Pinks
Candytuft	Sweet William
Fuchsias	Stocks
Geraniums	Sweet Peas
Heliotrope	Snapdragon
Lobelia	Virginia Stocks
Musk	Verbenas
Myrtles	British Ferns, such as
Mignonette	the Common Poly-
Nasturtiums(Tropæolums)	pody, the Holly Fern,
Nemophila	and the Male Fern,
	may be well grown
	in the window.

SELECT LIST OF ROSES.—Rev. Radycliffe, gives the following, in the *London Journal of Horticulture*:

Rose-colored H. P.'s.—Anna Alexieff, Comte de Nanteuil, La Ville de St. Denis, *John Hopper, *W. Griffiths, Victor Verdier, Duchess de Morny, *Gloire de Vitry, splendid on its own roots; *Charles Rouillard, first-rate, extra; *Comtesse Cecile Chabrilliant, extra, but not so hardy as the above.

Crimson—*Charles Lefebvre, *Senateur Vaisse *Duchesse de Caylus, *Lord Macaulay, *Lady Suffield, new, first-rate; Dr. Andry, Francois Lacharme, Baronne Adolph de Rothschild, *Jules Margottin, George Prince, Dr. Spitzer,

Duke of Wellington, John Keynes, new, large, and fine; *Madame Victor Verdier, Madame Boutin, Madame Crapelet, Madame C. Wood, Madame Clemence Joigneaux, Madame Moreau, and Madame Julie Daran.

Dark Crimson, Maroon, Plum Purple, or Shade, thereof.—Vicomte Vigier; *Pierre Notting, extra; *Prince Camille de Rohan, extra; *Black Prince, new, very fine; *Duc de Cazes; Triomphe de Paris; Souvenir Dr. Jamain, new, beautiful; Duchesse de Medina Cœli.

MANURING CONIFERS.—In England an idea prevails that manure is hurtful to Coniferæ; the idea originating from the fact that, wild, they usually grow in barren, sandy places. We do not think this idea has much of a hold on American tree growers, but if so we may say our experience accords with the following from the *Gardeners' Chronicle:*

"I see (p. 856) that Mr. Frost says, "he would not use manure for Pinuses." He may be right, but I have seen or fancy I have seen, good well rotted dung do Conifers a deal of good. Some three or four year ago I transplanted a large Silver Fir, 10 to 12 feet or more in height. I did not take any personal trouble about it, but left the operation to my gardener (who is only a common laborer) and to another laborer. The plant was moved, and grew, but looked very shabby and miserable all the next summer, when I had two barrow-loads of old Cucumber frame dung pricked in over its roots, and gave it a good soaking in water, and I was surprised the next season to see how vigorous it became. I had an Araucaria and a Cryptomeria which did not grow or look as they ought, and I gave them a similar dose, and had every reason to be satisfied with the result. I never hear the question of using manure for Conifers discussed, without thinking there is a wide difference between the use and abuse of everything. In growing timber I would discard the use of all artificial stimulants, but in growing garden trees, the judicious use of them now and then saves time, if it does nothing else.—*C. F. P.*

DEATH OF Mr. JOHN WATERER, THE RHODODENDRON GROWER.—A well known and much respected nurseryman, Mr. John Waterer, of Bagshot, died peacefully on the 2d inst., at the patriarchal age of 85. For the last 20 years Mr. Waterer has contributed the annual display of Rhododendrons to the Royal Botanic Society, Regent's Park.

SMALL SIZE OF FUNGUS SPORES.—A correspondent of *Gardeners' Chronicle*, gives the following measurements:

Having paid particular attention to the spores of the larger Fungi for some time past, perhaps the following notes may be found of interest by some of your readers. Fungus spores vary exceedingly in size, color, shape, and substance; some are very persistent, others speedily collapse; some are sticky, others dusty and dry; some harmless, others poisonous.

In the accompanying illustration are figures of the pale blue spores of Polyporus cæsius. The extreme length of a single spore is one 10,000th of an inch, and the width one 20,000th of an inch. By a very simple computation it will therefore be seen that it requires the inconceivable number of 200,000,000 of spores to cover 1 inch superficial. This Polyporus is not uncommon on old Larch.

HORTICULTURAL NOTICES.

FRUIT GROWERS' SOCIETY OF PA.

As announced last month, this Society will hold its annual meeting on the third Wednesday in January.

We understand that some members intend to bring forward some measures which will tend to highly increased usefulness on the part of the Society, and as many of the members as possible are desired at Harrisburg, to sanction the proposed changes.

ALTON HORTICULTURAL SOCIETY.

At the November meeting, many interesting matters were discussed. Of Pear blight Dr. Hull said:

I have frequently made statements that root pruning was a sure preventive of blight in the pear, and have tried, in the different places I have visited this summer, to have committees appointed who would thoroughly test the matter and report. And I would now move that this Society appoint a committee whose duty it shall be to ascertain the facts, either for or against the practise and report the same.

The President appointed said committee.

D. E. Brown—Dwarf trees blight as bad as any. In my judgment the true theory is this: root pruning forces the roots to go down deep where there is plenty of moisture. Give a pear tree deep soil and the roots will run down as far as top will run up, and never blight. The pear trees on the American Bottom will illustrate this: they have deep soil and never blight. Mr. Barry has a peach orchard near where we now are: trees planted from one and a half to two feet deep never blight. From my observation I am fully convinced that the secret of successful pear culture lies in deep rooting.

Mr. Snedeker—I observe on some of my pear trees that the bark near the base of the trees looks as if they had the erysipelas; the bark will become black, and when it extends around the tree, the tree dies. It dies at the base first, before the top shows much sign of disease. I wish to know if it is what is called blight¿

Dr. Hull—I am really afraid Mr. Snedeker's has the root blight of Southern Illinois: it would be impossible to tell, however, unless the trees were dug up and examined. In Southern Illinois they have what is called rotten root—the trees are apparently healthy in foliage but dead at the root. I have inoculated and killed two trees on my place with the disease.

On motion of Dr. Hull, the topic for discussion at next meeting will be 'The best methods of destroying our insect enemies.'

Dr. Hull—Before the Society adjourns, I wish to bring up one other matter, and that is the course pursued by the *Journal of Horticulture*, in puffing unknown and probably worthless fruits into notoriety. (He mentioned several instances, among them the 'Wilder Strawberry.') A large portion of each number is taken up with puffs of this fruit which has never been fruited out of the ground of the originator, and, for aught they know, may be perfectly worthless anywhere else. I believe the course being pursued by the *Journal* is a proper subject for the censure of all Horticultural Societies, and would move that this Society condemn the action of the editors in the matter spoken of.

E. A. Riehl—I second the motion. I am personally cognizant of the fact that they have written to a person in this neighborhood, engaged somewhat in growing nursery stock, soliciting advertisements of any new thing he may have which they will illustrate and puff into notoriety. They do this regardless of whether the article is worthy of notice or not. I think such a method of conducting a Horticultural or Agricultural journal is deserving of censure, and for one I shall vote for it.

Mr. Pearson opposed the motion in some very able and animated remarks.

Several members, while condemning the course of the *Journal*, in respect to its want of principle, were opposed to the motion, believing that the Society would be acting outside of its legitimate sphere by passing it.

Dr. Hull—I withdraw the motion. I simply offered it to get an expression of the Society in regard to the matter, and have accomplished all I desired.

Society adjourned to meet the first Thursday in December, at the residence of J. Snedeker, Jerseyville, at which time he hopes to see a general turn-out of all interested in Horticulture. One hundred and fifty dined together on the present occasion."

B. L. KINGSBURY, *Secretary.*

THE OHIO STATE HORTICULTURAL SOCIETY

Have held an interesting session at Columbus, Ohio. They changed their title last year from Pomological to Horticultural, so. outside of fruits, it appears from reports which we find in the Columbus papers, that other horticultural topics, such as Potatoes, and Evergreens were discussed. Mr. F. R. Elliott, spoke of the "American Spruce," as a substitute for Norway. Manning had found the Hemlock desirable in that region. Mr. Batcham, showed the advantages of Evergreen belts to Orchard.

Of Blackberries, the experience of the speakers were:

Colonel Richmond that his plants (Wilson) last winter were not hardy. Mr. Campbell reported the same. Mr. Warder found it early, not superior in quality. Mr. Campbell reported the Kittatinny, strong, hardy, good fruit. Mr. Richmond said the variety was not satisfactory as to size. Mr. Warder said in New Jersey it was very fine.

Of Potatoes the Harrison, Pink Eye, Rusty Coat, Early Rose, and the "White" Peach Blow were commended. The Early Goodrich. owing to the late season, the members thought had no been as good as heretofore.

Of Grapes, Mr. Elliott defended the Catawba. We have not the concluding reports at the time of going to press.

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HINTS FOR FEBRUARY.

FLOWER GARDEN AND PLEASURE GROUND.

The great trouble with the most planters is. not so much *how* to plant as *what* to plant. Our readers pretty much understand that it is in bad taste to plant large growing trees in small places, except with the view of ultimately cutting them away. Also they choose evergreens to plant where warmth and shelter in winter mostly demand them,—and deciduous trees, where lightness and gaiety are more required in Summer. They also employ more shrubbery for massing and filling up than formerly. These lessons we have repeatedly taught, and it now occurs to us that what to plant will be in season.

Amongst large sized trees of the evergreen class, that are almost indispensable in grounds of any size, are the White or Weymouth Pine, Austrian Pine, Scotch Pine, all well known; but there are a few others which are scarcer, but which when common enough to be cheap, will be quite as much appreciated as these. Amongst these are the Bhotan or Himalayan Pine, *Pinus excelsa*. This has been unpopular because of a few fine specimens having been killed by some insects or fungus, it is not clear which.—but we know some specimens thirty feet high, and believe they are no more subject to disease than the White Pine. *Pinus Australis;* the long leaved Pine of the South, is hardy in Philadelphia, but it has to get strongly rooted before it grows fast, and has to reach age before it branches much, we cannot speak of its value in ornamental gardening. *Pinus maritima*, is somewhat like it in its long leaves, but is the most rapid of all pines. It is not pretty when young; but makes a very striking appearance with age on large lawns. It is just hardy in Philadelphia, but we suppose would be too much injured to be popular north of this generally.

Pinus mitis and *Pinus rigida*, are two very pretty native Pines of large growth, equal in beauty to any foreign kinds, but so rarely grown in nurseries that we are afraid to name them here, as we do not know where the planter could obtain them. *Pinus pyrenaica*, is much like the Austrian, but has longer and finer foliage, and the wood is reddish instead of a grey brown, as in the common Black Austrian. Amongst the spruces the best known and most essential is the Norway. Then we may use the White Spruce, and, in northern regions, the Black Spruce. We believe it does no good south of this point.

The Hemlock Spruce is very desirable so far south as North Carolina, below that it dwindles away. Amongst the rarer ones are *A. Menziesii*, and south of Philadelphia, *A. Douglasii*. Of the fir tribe the Silver is extremely desirable, and the Balsam Fir in northern regions, or in low rich soils, but not wet. Amongst the rarer ones very desirable is the Siberian, the Nordmann, and the Cephalonian Silvers,—the last the tenderest we believe, the *Nobilis* and *Grandis* will also prove very hardy and desirable, although we have seen no very large specimens. We think we may class the *Cryptomeria japonica* amongst the larger class of Evergreens which is hardy and desirable, and then close our list, no very extensive one. Of Evergreens which make only a medium sized tree, we also have Pines, Spruces, and Firs,—of the former, the Cembran Pine is indispensable; and if we could find them in our nurseries, we would like to add *Pinus inops* and *Pinus Banksiana*. Of Spruces we have no common ones of medium height, but a rather rare one. *Abies orientalis* ought to be in every small

garden where choice and good things are desirable. When we get to the smaller size evergreens or dwarfs, we have a great variety amongst Junipers, Arborvitæs, Yews. Of this class however are three which deserve especial mention, because we think that any one who will make them common enough to plant cheaply everywhere, will be public benefactors. We mean Lawson's Cypress, Nutkæ Sound Arborvitæ, and the *Libocedrus decurrens*, all hardy and very beautiful evergreens of medium growth.

Though limited pretty much in evergreens, there is a great variety in deciduous trees from which to choose. We have, at least here in the East, to drop three beautiful trees—the Elms, through their foliage being so disfigured by the leaf slug,—the Plane tree, which has its early foliage destroyed in Spring by a fungus,—and the European Linden, whose trunk soon becomes the prey of borers. But we have left the American Linden,—the European plane,—the Oak in its many forms,—the Ash, of which we have half a dozen kinds in the nurseries,—the Beech with their many forms of foliage, especially the blood-leaved and the weeping,—Poplars, Horse Chestnuts, Birches, Maples, many varieties,—Chestnuts, Sweet Gums, Kentucky Coffee, Willows, Magnolias, Tulip trees, Cypress, and Larch, are amongst those easily to be obtained.

About Shrubs—of those which are beautiful and can be readily and cheaply obtained, we may name Dwarf Horse Chestnut, flowering in June; the different Dog-woods, Cornus Florida, C. sanguinea, C. mascula, C. alba, and particularly the variegated English; the Hawthorns are very pretty when in a cool soil and situation, partially shaded from the sun in summer—there are many fine double varieties of the English which do best when grafted on American stocks; the Double White and Double Red and Pink are particularly desirable; the Laburnum is rather a strong-growing shrub; also wanting a cool soil and situation. When the season happens favorably, it is the most ornamental shrub we have. The Sea Buckthorn is very desirable for its pretty silver foliage; but it should not be set on a lawn, as it suckers somewhat: the shrubbery border is the place for it. Of the silver-leaved class, the Oleasters are very desirable. The yellow is not hardy north of New York; but the small-leaved (*Elæagnus parvifolia*) is perfectly so; it has in addition very sweet flowers and pretty berries to recommend it. The Silver Bell or Snow-drop tree is also a large shrub; but its early white flowers give it a claim on most shrubberies, especially as it blooms quite young. The Magnolias, purpurea and glauca, are very desirable. The latter, as it grows in swamps when wild, is not often seen cultivated, as it is supposed it will not do in dry soil. This is a mistake. In a deep rich soil it thrives amazingly. It requires a free use of the pruning-knife on transplanting. The European Bird Cherry is one of the handsomest strong-growing shrubs of its season—June. For a single specimen on a lawn it is not to be excelled. Its habit is good, and its flowering abundant; its berries are also very enticing to birds, which form no mean addition to the pleasure of a garden. The Pyrus japonica every one knows: the white variety is desirable, though it is more pink than white. The Mist tree is indispensable, from its striking peculiarity of flowering. The White Fringe, with leaves like the Lilac, and large pendant clusters of white flowers, no less so. There are several Willows which, as shrubs, we would on no account be without, for their flowers large and sweet, so early that the first sun that thaws the March snow, bring them out also. The Goat Willow and the Villars Willow—male varieties of course—are especially to be mentioned. The Indian Cherry (*Amelanchier*), following the Willow in flowering, and very beautiful; and the Double Pink, and Double White Dwarf Almond, are also early and pretty. The Yellow White and Crimson Azaleas, are magnificent, but so scarce in nurseries, we are almost afraid to have them in this list. The different Berberries can be scarcely spared for their pretty red berries in fall. The Sweet Shrub or Virginia Calycanthus. is one of the sweetest of all flowering shrubs: though its color is dull. The Bladder Senna is very desirable for its love of our summer heat, flowering profusely during July and August. The Mezereon is particularly sweet and attractive, blooming very early, but like the Azalea, rather scarce in nurseries.

The Deutzias are well known.—scabra and gracilis are the two best. The Burning bushes are beautiful in the fall,—the Mississippi Purple (*atropurpurea*), and the European, are two most desirable. The Golden Bell and early Spiræas, (prunitolia, Blumeana and Reevesii), every one wants, as well as the Weigela rosea. The public taste is divided on the Althea, yet there are few gardens without some one variety or other. The variegated leaved is scarce, but as desirable as any shrub grown. The Oak leaved Hydrangea makes a very striking object in a collection, and the common garden Hydrangea indispensable for dense shade. For flowering in August, and for dwarf compact habits, Hypericum Kalmianum, or the H. prolificum, is perhaps unrivalled. A rather scarce, but particularly pretty native shrub is Itea Virginica, which, like the Magnolia glauca, a swamp plant, cultivates well in dry ground. The Jasminum nudiflorum should be trained to a stiff stake, and get a pruning with the shears twice a year; it then grows very compact, and will support itself after the stake rots away; then it makes one of the prettiest shrubbery bushes imaginable. As an oriental looking plant, the common privet is good; indeed, its pure white flowers, fragrant as they are, and jet black berries, always attract attention. It is a plant that will thrive in the most gravelly soils. The Upright Honeysuckles are perhaps the most common in gardens; the Tartarian deservedly so—few things are prettier. The Fly Honeysuckle is also desirable, for though the flowers are not quite as showy as the Tartarian, the habit is most graceful. Then the Mock Oranges or Philadelphus, though all white-flowering, afford, by their diversity of habit, many good shrubs. The sweet one, (*P. coronarius*,) one of the oldest and best, is least common. The Large-flowered and Gordon's Upright are the two next best. The Tree Pæonies, though rather expensive, every one wants. The Red and White Snowberry make good show in winter by their interesting fruit. As for the Lilacs, we need scarcely recommend them. Common as they are, no garden is complete without them. The Persian is a very distinct one from the common kinds. There are many new varieties, but they are but shades of old colors.

There are a few new kinds which might be added; *Deutzia crenata pleno*, *Forsythia suspensa*, and *Callicarpa purpurea*, are amongst the best.

FRUIT GARDEN.

Here "what shall I plant," becomes bewildering. Varieties vary so in various localities, and even in the same localities according to culture. The Concord and Clinton, amongst grapes, are the two easiest grown of any good kinds that have been generally tried,—and the Delaware, Iona, Catawba, the Roger's Hybrids, and Creveling, do well in isolated instances, and under peculiar treatment. Of the many other good kinds, we hear of them doing well at times,—but we think less frequently than those named.

Of Strawberries,—Wilson's Albany, Triomphe de Gand, and Agriculturist, have yet the greatest run of popularity. In some districts Jucunda, in others La Constante, and again elsewhere other things, are favored with enthusiastic champions and friends. Of Blackberries.—Lawton, Dorchester, Kittatinny, and Wilson's Early, are all generally popular.

In Raspberries,—the Philadelphia, is still the hardiest Raspberry, and the easiest to grow; and when not too much dug about, and when well surface manured, is almost equal to the best in flavor. Of the foreign kinds we can name no one that is especially popular. The Hornet, Brinckle's Orange, Franconia, and Genesee Antwerp, stand about where they have been the past few years. The Clarke is highly spoken of, but we believe has not been much tried outside of those who propagate plants particularly for sale. Many of these are honorable men, and their opinion of its value as good as any one else's; but we are naming only those which the voice of the whole country recommends.

In Gooseberries, there is nothing better than Houghton's Seedling, and American Cluster, which are not identical, as some nurserymen believe. Of Currants—Red Dutch, White Dutch, and La Versailles, will please every one. Raby Castle Red, is a good late. Of Apples—taking the latitude of Pennsylvania, the following will please: Red Astrachan, Ridge Pippin, Smith's Cider, Early Joe, Baldwin, Cornell's Fancy Maiden's Blush, Porter, Raule's Janet, Hagloe, Northern Spy, King of Tompkins County. Of Pears—Bartlett, Seckel, Early Catharine, Buffum, Beurre d'Anjou, Louise Bonne de Jersey, Belle Lucrative, Lawrence, Sheldon, Tyson, Urbaniste, and generally Vicar of Winkfield.

In Cherries—we may name Early Purple Guigne, May Duke, Black Tartarian, Elton, Belle Magnifique, and Kentish Morello. Peaches—Hale's Early, Gros Mignonne, Crawford's Early, Old Mixon, Late Heath, Early York.

In order to grow good fruit, we need only repeat in a general way, that trees require as much food as a crop of corn, or potatoes; but it is very important to keep the feeding roots at the surface, and therefore that the very best way to manure fruit trees, is by surface dressing.

VEGETABLE GARDEN.

In managing the vegetable garden the highest excellence should be aimed at. This is the chief source of pleasure in a garden. If one can take no pleasure in his garden,—if the watching of the beautiful processes of nature in furnishing him food—and the many lessons they teach him, which he in a thousand ways can so pleasurably and profitably apply, have no charms or attractions for him, he had better give up gardening; for assuredly, in most cases,—even to 99 in 100 instances,—the market gardener will bring the vegetables to his own door cheaper than he can grow them. Amateur gardening should primarily be pursued for the lessons it teaches, and the pleasure it affords; when it ceases to do this it should be abandoned.

In the Middle States the work for February will, for the most part, consist of preparations for future operations, and particularly for dealing with the manure question. All those kinds that are grown for their leaves or stems require an abundance of nitrogenous manures; and it is useless to attempt vegetable gardening without it. To this class belong Cabbage, Lettuce, Spinach, etc. The other class, which is grown principally for its seeds or pods, (as Beans, Peas, etc.,) do not require much manure of this character; in fact they are injured by it. It causes too great a growth of steam and leaf, and the earliness—a great aim in vegetable growing—is injuriously affected. Mineral manures, as wood ashes, bone-dust, etc., are much better for them. For vegetables requiring rich stable manure, it is better that they have it well rotted and decayed. Nothing has yet been found so well fitted for the purpose as old hot-bed-dung: though to the smell, no trace of "ammonia" remains in it.

One of the most interesting parts of a vegetable garden is a hot-bed for starting seeds early. The end of the month will be time enough for those who have not command of a large supply of stable manure, as the very low temperature we often get at the end of the month, soon absorbs all the heat the hot-bed possessed. It is in any event best to put up the beds in the warmest and most sheltered spots we can find, and to keep cold winds from the manure, by covering it with branches of trees or mats; and the glass should always be covered with mats at night. Tomatoes, Egg-plants, Peppers and Cucumbers, are the first seeds to be sown this way. Cooler frames can be got ready for Cauliflower, Lettuce, Beets, Celery and Early York Cabbage, a little of which may be sown about the end of the month for the earliest crop. The Cauliflower is a particularly valued vegetable, and no expense spared to get them in perfection will be regretted when one's efforts are successful.

In the open air, should the weather prove favorable, as it often is about the end of the month, Peas and Potatoes may be planted. Frost seldom gets deep enough in new dug ground to injure them after this date.

In the more southern States, the gardener will lose no time in getting in his Potatoes, Beets, Carrots, Parsnips, Peas, Spinach, Radishes, Lettuce, Onions, and Salsafy. These should be the first crops put in after the season breaks up for good. The earlier they are in the better. Asparagus, Rhubarb and Horse Radish beds may now be made. Asparagus roots are generally planted too thickly to produce fine shoots,—they starve one another. A bed five feet wide should have three rows, and the plants set about eighteen inches apart. A deep soil is very important, as the succulent stems require every chance they can get for obtaining moisture. About four inches beneath the soil is sufficient to plant them. Rhubarb also requires a deep, rich and moist soil. Horse-Radish beds are best made by taking pieces of strong roots, about one inch long, and making a hole about a foot or fifteen inches deep, with a dibble, and dropping the piece to the bottom of the hole; a clean, straight root will then rise up through the soil. Crowns or eyes are better than pieces of roots,—where they can be had,—and a rich clayey soil better than a light, sandy one.

About the middle or end of the month, or still later in the North,—say the middle of March,—Celery and late Cabbage may be sown. Here, we usually sow the second week in March.

In the Northern States, Broccoli, and Cauliflower when sown in March as recommended, do not head early enough in Fall. It should be sown about the time of Early York Cabbage, in the hot-bed, during this month.

GREENHOUSES.

This is the season when many things will require re-potting. Many have a set time and season to do this; but some things require re-potting at various seasons. The best time is just before they are about to make a new growth, Camellias, Azaleas, and many plants, for instance, start at this season. It is not necessary to repot so often as some think, especially if bloom, and not very large specimens, is chiefly wanted. If the pot is very full of roots, and the plant growing weak, it may need re-potting.

In potting see that some provision is made for allowing the water to readily to escape, by putting broken crokes over the hole. Use soil rather dry, and ram it firmly about the old ball. Prefer pots only a little larger, to very large shifts, as less liable to accidents. Trim the plants in a little, if unshapely, to encourage the new growth where wanted.

Many who have but small houses and wish to have a variety, are troubled with valued plants becoming too large. To keep them low, as soon as the plant has matured its growth, cut it down as low as may be desired. As soon as it shows signs of breaking forth into a new growth, turn it out of the pot; shake or tear away the old ball of roots and put it into a small pot as it can be got into; and when it grows again, and fills the pot with roots, re-pot again as before.

Sometimes the plants get "sick," which is known by unhealthy, yellow leaves. This is usually by over-watering, generating a gas, or, as gardeners term it, a "sourness," destructive to the roots. The remedy is to cut the plant back a little, shake out the soil, and put the plant in a small pot with new soil and place the plant in a house only moderately warm, and which is naturally moist,—so that the plant can live for a while without requiring much water. It will generally recover.

Every one interested in plant growing must be continually on the watch for small insects, which destroy more plants than many are aware of. The little Black Thrip is very troublesome to Azaleas; the green fly to all soft-wooded plants; the scale to Camellias, Oleanders, Cactuses, and the mealy bug to almost all hot house plants. Continual syringings with warm, greasy water, in which sulphur has been mixed, is the best remedy. Tobacco smoke is still the most approved mode of destroying green fly and thrip.

COMMUNICATIONS.

THE CLASSIFICATION OF THE GRAPE.

BY DR. J. STAYMAN, LEAVENWORTH, KANSAS.

That the grape is effected by temperature and moisture, we have fully shown, but notwithstanding this is true, some species are better adapted to variation of temperature and moisture than others, which we now shall endeavor to show and classify; but before doing so, we will refer you to the following remarks of Mr. S. B. Buckley, on the classification of the grape:

"Although much has been published about the indigenous grapes of North America, still they are far from being well known, and botanists are not agreed as to the names which should be given to the different species. The descriptions of them by old botanist were so brief, that it is often impossible to tell the particular species intended to be described. To increase the difficulty, mere varieties of one species were sometimes described and made into two or more species. The writer has paid particular attention to them during the many years of extensive travel, for the purpose of acquiring a knowledge of the botany of the country, especially its trees and grapes; neither of which can be well understood without an extensive observation of them in their growing condition.

The grapes are so varied in the shape of their leaves that it is difficult for the closest botanist to distinguish their species from mere specimens in the herbarium. The same vine often has entire leaves and also those which are deeply lobed with many intermediate forms. The fruit which is one of the most characteristic marks of species is frequently wanting in the herbarium, or if there in its dry state, it has nearly lost all its distinguishing characters. There are but five native species of the *true grape* growing east of the Mississippi river, which are known and recognized as such by the best botanists. There are the Northern Fox Grape (*Vitis labrusca*), the Carribean Grape (*Vitis Carribea*), the Frost or Summer Grape (*Vitis æstivalis*), the Winter Grape (*Vitis cordifolia*), the Muscadine or Scuppernong Grape (*Vitis rotundifolia*).

All other species which have been described or named, and said to be indigenous east of the Mississippi, are varieties or forms of some one or other of the above. In addition to those five species of grape, there are four which are pecu-

liar to Texas, of which three are now first described. The California Grape (*Vitis Californica*) completes the list of species of the grape, which are known to be natives of North America north of Mexico, making in all ten species of the true grape."

From the above remarks, we see the difficulty of botanists determining the different species of the grape; and from the descriptions given, it is equally as difficult to determine the species a variety belongs to. "Positive character can only be founded upon evident facts, and never upon a presumption of the existence of facts derived from analogy. For it is contrary to true philosophy to suffer hypothetical reasoning to usurp the place of direct observation of facts." *All real science in Botany must rest upon constant character.* How vague and imperfect must the description of the different species of the grape be, when such talented and close-observing men as James S. Lippincott, of Haddonfield, N. J., will class the Clinton grape with *Vitis æstivalis*, and William Saunders, Superintendent of Experimental Garden, Washington City, class it with *Vitis cordifolia*, and such an able botanist as Prof. Gray to class the Isabella with *Vitis labrusca*.

It is not our object to enter into a controversy upon the subject, but to call your attention to the facts. If botanists have been unable to give a satisfactory classification, they have been unable to find *constant characters* upon which to found a species. Having presented the opinions of able botanists respecting the classification of the grape, we shall take the liberty of introducing some additional matter upon the subject.

The Fox Grape, *Vitis labrusca*, "grows as far north as Canada, and in all the Atlantic States to Florida," along the *streams and rivers* amongst the thickets and brambles in *low, moist and wet places*, in sandy gravelly soil, also on high dry free stone and shaley lands. We have never found it growing wild on rich limestone clay, but have seen a creek that divided the limestone from the freestone lands, prescribe its boundary, never crossing unless on similar soil. We have gathered this grape in perfection in *seasons of the greatest rain*. When the vines were surrounded by running water, I always found them hardy and healthy. This grape must be rare in Ohio, Indiana, Illinois, Iowa, Missouri, and Kansas, for we have been living and traveling in those States for more than 25 years, yet have never found it growing wild in either of them. Although this grape varies much in size and color, its character is very distinct in bunch, berry, skin, pulp, and seed, also in wood and foliage, and when ripe always *drops its fruit*. All its seedlings have the *same peculiarities and never change*. Some are of the largest size; they ripen from August to October.

Winter or Frost grape (*Vitis cordifolia*), this grape has a more extended range than any other species, and grows perhaps in every State east of the Rocky Mountains. It is found on the banks of *creeks and rivers*, on *rich bottom land*, and also on high bluffs bordering the streams. It occupies the highest and lowest land, and is not so often found in the intermediate. It is very distinct in foliage, bunch, berry, seed and wood, and is the most hardy grape of all the species, having smooth, thin, deeply serrated leaves, and also smooth fibrous bark, which does not separate easily from the wood; the bunches are long, simple and compound, also loose and compact; seeds small and soft, berries juicy, no pulp, both sweet and sour, and never drops from the bunch. The fruit is small and ripens from July until October.

Summer Grape, (*Vitis æstivalis*). This is the most varied and obscure of any species, and the most fickle in its character. We always found it on dry land. The difficulty in defining this grape is it has been classed with other species. It has many of the peculiarities of *cordifolia*, except the foliage, and is not as healthy and hardy, and does not grow so far north.

We have a species common to Kansas, which we never found growing on low land, but generally on high and dry, rolling brushy land, which cannot be distinguished from Norton's Virginia, in bunch, wood, or manner of growth, and like it will not grow from cuttings. This species is so well marked in the above characteristics and it comes true from seed, that we think it distinct, and name it *Vitis Virginica*, as Norton's Virginia has evidently come from this species. It is hardy, but requires a long warm season to mature the wood and fruit: ripens in October. We have several other species indigenous to Kansas, but like some others not within the range of this article.

European Grape (*Vitis vinifera*). This species does not belong to this country, but it is so intimately connected with our subject, that we cannot pass it by, as we have a number of varieties hybridized with it. This grape is the most sensitive to change of temperature and moisture of any known species. It will not endure much

rain or grow on wet land. It is only in a dry climate and on high rolling situations that it will succeed, where there is not more than 31 inches of an annual rain fall, and for the growing and maturing season more than 15 inches. Therefore it will not succeed in the Atlantic States, where we have an annual rain fall of 39 inches, and for growing and maturing seasons 25 inches, but it will succeed in California, when there is but 13 inches of annual rain fall, for the growing and maturing season but one inch.

Nearly all the grapes we have in cultivation are crosses or hybrids of some of the above species. The Concord, Hartford Prolific, Dracut Amber and Ives' Seedling are hybrids of *labrusca*. We may differ here with many persons, but it should first be shown that a species will produce seedlings of different characteristics without crossing or hybridizing; color and size may change, but when its *constancy* is once broken up by crossing or hybridizing, then we have innumerable varieties.

We shall see what Mr. E. W. Bull has to say upon the subject. He raised the Concord grape, and its history, we think warrants, our conclusions. He says, "I was led by the impossibility of ripening any of the grapes *then on the list*, living as I do in the valley of the Concord. I turned my attention to our natives, believing that good grapes could be had of this stock. I wanted a grape that should be vigorous, hardy, productive, early, with as good quality as possible. *I found such a grape, a good eating grape* for a wild native, and began with this. In five or six years the seedlings bore fruit; *the seed of this were planted again*, and from *the latter I obtained the Concord*. And from the Concord in the third generation I have grapes of *great variety*. The original *wild habit seems broken up*, for from stock as black as night, I have obtained grapes as white as the Chasselas, delicate in texture and flavor."

The italics are our own, we should want no better evidence of hybridization or crossing than the above, without knowing it to have been done. There is not one fact in the whole history that shows the Concord to be only an improved Fox grape (*Vitis labrusca*), but everything to the contrary; the one he found *was a good eating grape*, which cannot be said of the Fox. He had tried "all on the lists," so he likely had some on his place at the time he was raising seedlings. *The original habit was broken in the third generation.* Then it had lost the constancy of a species and must have been crossed.

Nature is rich in her resources, and has produced different species for the purpose of breaking up their own constancy, and producing variety to suit the increasing wants of man. In her laboratory, silent, but not alone, is the process of hybridization going on, which the inconstancy of her varieties prove.

Admit this theory, and all mystery will disappear, and we can reason and philosophise upon this subject; by knowing the character and habits of the different species, we can predict with almost certainty the fate of any variety from its parentage. Having described the habits and susceptibilities of different species of the grape, and hybridizing for the purpose of changing the constancy and producing better varieties, we now shall contemplate the result of hybridizing with the different species.

Had the law of species been properly considered and their natural habits and sensitiveness been better understood, we would not have continued discussing the origin of the Delaware grape, or classified the Catawba and Isabella with the *Vitis labrusca*, or declared that Roger's hybrids, Rebecca, Clara and others, were simply natives. Neither would we have contended for the hardiness and certainty of the Catawba, Isabella and Delaware or their seedlings, or have expected a hardy healthy grape by hybridizing them with the foreign grape *Vitis vinifera*, or have even supposed that the Norton Virginia was a cross between the Bland and Miller's Burgundy!

There is no law in nature to divert the species from their natural habits, we may produce innumerable varieties; but where is there an example of increasing their health, vigor or hardiness, or imparting to them different constitutions and conditions from their parents? This being the case, the Catawba, Isabella and Delaware must be hybrids or seedlings from them, because they have characteristics common to more than *one species*, and not the constancy of any. That a pure seedling of the *Vitis labrusca* could loose its pubescense, tough skin and pulp, short plump seed, musky taste, and its natural habit of enduring *extremes of temperature and moisture*, and become so delicate in texture, fine in quality, long and large in bunch, berries adhering with such tenacity and only succeed in a dry warm soil, with average rain fall, and without having any intermediate links, is beyond our imagination. The only reasonable conclusion we can

come to, is that they are accidental hybrids, like Rebecca and Clara.

From the foregoing remarks its follows, that hybrids between *labrusca* and *cordifolia* are the most desirable and valuable, as they cover a greater range of country than any other species, possessing health, hardiness and vigor, enduring extremes of temperature and moisture, having size, tenderness of pulp, consistency and substance, maturing early and late, and being equally adapted for wine or market.

Although the *Vitis vinifera* and *æstivalis* are desirable species under favorable conditions of temperature and moisture, yet hybrids from them cannot occupy the same range of country as the above species, consequently they will be more local in their characters and not adapted to the same vicissitudes of climate.

The *Vitis virginica* is a very valuable species, but requires a long, dry and warm season to ripen and fully mature its fruit and wood. When once established it is as vigorous, healthy, hardy and productive, making wine in less quantity, but greater in body and finer in quality, than any of the native species, possessing value to hybridize with the *cordifolia* where wine is an object, to lessen the acid and thicken the leaf of that species. From these we may expect the richest and finest wine, and from the *labrusca* the largest and finest market grapes, adapted to the variable climate of the United States.

Having shown the natural habits of the species of the grape, and the results of hybridization, we shall now endeavor to classify some of the most important varieties, giving their value in proportion to their hardiness, vigor, health and range of country they are adapted to. In doing so we shall be governed in our classification by the habits and characteristics of the species. Properly speaking we have no improved grapes, but new varieties resulting from hybridizing and crossing.

Varieties bear to each other the same relation that species bear to each other; and as no species of grape can be said to be an improved species of another, so no variety of the grape can be said to be an improved variety of another. If our reasoning is correct, it follows that no variety is an improved *Vitis labrusca* or Fox grape, and the first grape showing different characteristics was a hybrid.

The Concord, Hartford Prolific and Ives' Seedling, as we before remarked, are either seedlings from hybrids or pure hybrids of *labrusca* and *cordifolia*. These cover a greater range of country and are the best market grapes we have. being very vigorous, healthy, hardy and productive, and always reliable, making fair wine. From these we may expect our best market grapes. We differ very much with those who say that the *Vitis labrusca* is the most sensitive to mildew and rot of any of the species.

That accidental hybrids exist, we shall give an instance. Some years ago we procured a grape in Illinois, which was noted for its great hardiness. The bunch was small, the berries medium, very pulpy and always dropped from the bunch; the foliage and general character like a Fox grape, except it was more hardy and the wood darker and smoother and grew more readily from cuttings; while seedlings from it had long bunches, small juicy berries, which never dropped, the leaves smooth and deeply serrated in every respect like *cordifolia*.

The Clinton and Taylor belong to the *Vitis cordifolia* species, and are the only varieties in this class that we think worth naming. They cover a greater range of country than any other varieties, are vigorous, healthy and hardy, much better adapted for wine than market, but they do not possess that fine aroma of some other varieties.

Norton's Virginia and Cynthiana we believe are hybrids of *Vitis virginica* and *cordifolia*. These varieties are only valuable for wine and have the finest aroma of any varieties, and possess great body and substance, but the great defect of these, they are only adapted to a high range of temperature and a late fall. No other grape can take their place for wine in regions favorable to their maturity, because no other varieties possess such high aroma and rich qualities.

The Delaware is no doubt a hybrid of *Vitis virginica* and *vinifera*, possessing the characters of both species. Therefore it is uncertain, and adapted only to favorable temperature and moisture, and too much like the European grape to be generally successful.

The Catawba and Isabella are also hybrids of *Vitis labrusca* and *vinifera*, and their seedlings, Diana, Iona, Israella and Adirondac are likewise uncertain, except under very favorable conditions. They are adapted to a very limited range of country, like the Delaware.

That the above are hybrids with *vinifera*, we shall endeavor to show. They are generally believed to be improved varieties of *labrusca*, but

how or when they were improved has not been shown, and where are the intermediate links? When does nature make such a leap from the most indifferent, to that of the highest excellence. They have been found just as they now are, without any chance of development, enduring less moisture and being of better quality than any native species.

We have on the contrary, the strongest evidence of immediate effect of hybridizing with European grapes by Rogers' and Allen's hybrids and the Rebecca and Clara. The oblong shape of the fruit, is a very strong presumptive evidence of the fact. We have no species with that shaped fruit, and we have no example of a pure native grape hybridized by a pure native species, change the shape of the fruit, while we have oblong fruit from hybridizing with European grape. There are many other peculiarities which can be better seen than described, which are equally as striking.

If we are correct in our classification, much of the mystery and also the difficulty connected with the cultivation of these varieties will disappear, seeing they owe much of their sensitiveness and uncertainty to the European grape, which will only succeed under the most favorable circumstances. We will likewise be able to judge of the success of hybridizing such varieties as Delaware, Diana, Catawba, &c., with the *Vitis vinifera*. We predicted years ago such results failures; and each season's observation since has fully verified it. A theory so much at variance with physiology and the laws of health, that diseased constitution can produce healthy offspring, we cannot admit.

There may be some hope of success, when *one of the species* is vigorous, healthy and hardy, like Rogers' hybrids, for some may perhaps partake of the hardy nature of the *labrusca*, but even in these we have no such an example.

[This suggestive paper of Dr. Stayman's is also being published in the St. Louis *Journal of Agriculture*. We suppose some friends, while assenting to most of Dr. S.'s deductions, will dissent from a few of the points presented; but we leave the correspondent and any controvertists to have their own say for the present.—Ed.]

KEEPING CABBAGE IN WINTER.

BY J. W. CLARKE, GREEN BAY, WIS.

Being one of those who have eaten all, or nearly all of the various branches of the Brassica or Cabbage tribe, I have in successive years tried a number of the so-called "safe" modes of keeping cabbage during winter, and particularly, in the latter half of February and first part of March; but such trials have resulted in only incomplete success till the winter of 1867 and '68, and that we are now passing through.

One year Cabbage were inverted and covered with earth, beveled to a ridge; the ground descending considerably, so that as water flowed from the ridge, it also flowed from both sides of the trench. By this plan I saved about one half of the cabbage,—not more. Boards on either side of cabbages inverted on the ground, the upper edges of the boards leaning together, were also tried with only about similar success.

Hanging the cabbages in pairs, root upward, in the upper part of a cellar, was tried, but here they wilted so much as to become tough and unpalatable. At this stage I thought of trying the plan in use by P. Henderson, as suggested in his curt and concentrated work on Gardening for Profit; but another idea interposing, I did not try Mr. H.'s method.

Last winter I succeeded well by the following simple means: The Cabbage, roots on, were taken to the wood lot, piled as compactly as possible in a conical heap about four feet high, then covered with a coating of leaves, about two feet thick, over all parts of the heap, and the heap topped off with a pitch of coarse refuse hay.

Results, 1st. The Cabbage kept fresh and sound, till middle of March. 2nd. They were very acceptable all winter, as wanted for use. 3rd. The time and trouble involved by this plan were less than half that required by any other, while the success was so complete, that I am keeping our cabbage in the same manner the present winter.

The question having arisen that I now might have contributed to the success of keeping cabbage with good success as above. it may be stated that there was no covering of snow, and the success is entirely due to the protecting influence of forest tree leaves.

LAWNS.

BY H. W. SARGENT, ESQ., WODENETHE, N. Y.

I perfectly agree with your views, in the December *Monthly*, about top-dressing Lawns "with fine soil," as I think the constant top-dressing during the summer, by allowing the grass to fall is not sufficient in itself, without occasionally the heavier food, of the "fine soil," once in three or four years—applied during the

winter. But in my neighborhood, and generally throughout the country, an application of soil, as a top-dressing, invariably brings in a great accession of that destructive weed, "The Summer or Crab Grass."

It seems so peculiarly congenial to our places, that I am afraid even to use any fresh or even old soil, unless where it can be kept cleaned or weeded. The older our lawns, the more completely (from July to 16th September) are they overrun with this pernicious weed.

For two years, while I was abroad, at the suggestion of Prof. Gray, I did not cut my lawn, after 1st of June until October, hoping to crowd it out, and I did to some considerable extent; but still last September, I had six men for three or four weeks, digging out what remained.—Should I now top-dress my lawn heavily with "fine soil," I should have it as bad as it was three years ago, and yet I have sufficient fine soil from an old grape border, to cover it half an inch thick,—but I am afraid to use it,—though my lawn requires it, and as the grass has very much run out, and though the lawn is very green yet its verdure is principally from moss, veronica and other creeping weeds.

By far the cleanest and softest and greenest lawn in this or any other country, is Mr. Hunnewell's, at Wellesley. Neither summer grass, dandelion or any weeds are ever seen there, and yet his lawn is constantly top-dressed with soil, but soil that has been *burnt*.

Mr. Hunnewell is in the habit of getting out of a swamp vast quantities of muck, and stocking it in alternate layers with old brush—when quite dry—it is set on fire and damp brush kept constantly heaped upon it to dampen the flames; this is kept up for several weeks, a smouldering fire. By the autumn, it is turned over several times, and then spread upon his lawn. The seeds of all weeds are probably destroyed, and I am satisfied that where crab grass or summer grass prevails as it does in this State, the soil used as top-dressing must be either burnt or else turned over so often as to vegetate and destroy all seeds.

SOME WINTER FAVORITES.

BY JAS. C. JOHNSTON.

(*Continued.*)

GESNERIA OBLONGATA.

A more indefatigable winter bloomer does not exist. Its showy orange tubes are forthcoming in November, and there is no such a thing as cutting a huet during four months at least. It is a stove plant, but does very well in the snuggest part of a greenhouse. A draught of cold air or a very low temperature at night, causes it to droop quickly. In all other respects it is a most easily managed plant. Soil: leaf mould two-thirds, perfectly decayed sod one-third, to which add a sprinkling of very old cow dung or hot bed manure, and a liberal allowance of silver or marble sand.

Plants may be had by subdivision, but they are inferior compared to those raised from cuttings. These will start readily in moderate heat during March and April. When rooted, plant in small pots, and after the first shift, decapitate to the second joint, which induces shoots to spring in pairs from the first and second. Encourage growth throughout the whole season, shortening back occasionally and shifting as the pots fill with roots.

ACUBA JAPONICA.

This fine evergreen is much less known, or used with us, than its merits deserve. The foliage—which is heavily and gracefully massed on extremely dark green stems—is of a rich, glossy green, splashed or blotched all over with gold. It is one of the most showy variegated shrubs, as well as the most useful, with which we are acquainted. Our specimens—which are large—are turned out of the pots, end of April, and planted in conspicuous positions, out of doors, under the shade of trees (not too dense), when they thrive without any attention whatever. In October they are lifted, and the roots—whose name is legion—are unsparingly reduced so as to render storage in a pot practicable. This ordeal should not be inflicted during a dry, hot spell, or windy weather; but rather on a cloudy, damp day, which goes far to counteract the severe check. Any light porous compost will answer, but the best is leaf mould, with a portion of peat and a good sprinkling of sharp sand. Manure is not required; but cocoa fibre is gratefully received and appreciated. A shady and well sheltered position is indispensable, with a sufficiency of water (in the absence of rain), until the first appearance of frost, when a transfer to the conservatory becomes necessary. Whilst the pots remain out of doors they must be plunged to their rims.

New varieties have been lately introduced from Japan, producing very showy berries, for which large prices was demanded. The following extract from Wm. Bull's catalogue of New and Rare plants, may be interesting: "It may be as well to state that the Acuba is a dicecious plant, that is to say, some of its individuals produce only male, others only female flowers, and that some 80 years ago, the ordinary Acuba was introduced from Japan, but the plant or plants so introduced happened to be females; by propagation, the whole stock in Europe sprang from the original introduction, and Japan from that time being a sealed country, the male plant could not be obtained. To the celebrated traveller and collector, Robt. Fortune, is due the merit of introducing the first male plant. Lately there have been several most important and distinct varieties introduced by Dr. Von Siebold, including male and female kinds, with plain green unspotted leaves, also others in both sexes, having blotches of variegated foliage."

BULBS.

We attach a peculiar interest to the advent of Narcissus and Hyacinths, at the close of the year. They are the avant couriers of spring, making haste ere winter has fully overtaken us, to herald the approach of opening buds, the tender blades of upspringing grass, under the protecting hedge rows, and the lullaby of bees. The first expansion of the well known flowers, is like the familiar face of old friends come back from afar to gladden our hearts once more. The Conservatory in winter, without a sprinkling of bulbs in bloom, would be in the same plight as a well spread breakfast table, with bread and butter wanting.

HYACINTHS.

Among scores of sorts we much prefer one of the oldest and cheapest for blooming in pots, during December, January and February. There may be others, equally good, but we have not found them yet. It is *Grand Vanquier*, single white. The Spike is so large and full, so massive, that to be double would be no improvement. It is a robust grower and seldom fails—as many other kinds do—to flower in perfection if treated with common justice. The following also do well, Grootvoorst, Lord Wellington, Waterloo, Double Red, of different shades, Pompone Superbe, Double purple; Keiser Alexandre, Double Blue; Anna Maria, Double White with violet-centre.

Deep narrow pots are best for Hyacinths. Soil: old and decayed manure, decayed turfy loam and leaf mould, in equal proportions, with a liberal allowance of sharp sand and a few lumps of charcoal at bottom, over the drainage. The first batch ought to be potted as early as the bulbs can be obtained; the second, three weeks later the third and last, early in November. Plunge the first batch in a warm situation—such as a cold frame fully exposed to the sun, or a vine border—at such a depth that the bulbs may receive the stimulus of warmth with *total exclusion from light.* The first indispensable process required of them, is *the development of roots only*, without which fine blooms are out of the question. When these are formed, forcing may commence by removing the pots into the greenhouse and placing them adjacent to the hot pipes in some unobtrusive corner. We had nearly omitted to state that the top of the bulbs should be on a level with the surface of the soil in the pots, when the whole has been firmly pressed down. After growth has fairly begun within doors, apply weak liquid manure twice a week till the spike is fully expanded. The second batch, if in a cooler position, or placed at a greater depth than the first, may be removed to the house, ten days later, and so on with later plantings. Three bulbs in a pot are most effective, but even one of Grand Vanquier will command respectful attention. As the spikes rise, each must be carefully supported on slender sticks, before the stalks become in the least crooked.

NARCISS.

The Polyanthus Narcissus is most easily grown, treated similarly to the Hyacinth, with this exception, that the bulbs must be set deeper in the pots, say with one inch of surface covering.—Our favorites are *Grand Monarque*, white with yellow cap; *Grand Soliel d'Or*, yellow; *Double Roman*, yellow and white, very early. There is a little gem called *N. Bulbocadium*, a dwarf, said to be hardy, but very pretty in pots.

ORNITHOGALUM.

There are some half dozen fine sorts described in the English catalogues, as well adapted for pot culture. We imported two of these, and bloomed them last winter. O. Thyrsoides (pyramidal) is very fine, with a long spike, in the style of a

hyacinth, but bearing roots the resemblance thereto. The color is white, with purple centre. O. aureum, gold and purple, is superb.

These bulbs are tardy in starting. We treated them like the Hyacinth, but their growth was tedious and slow. They continue growing all the year round apparently, and we presume are to be treated like Lilium auratum, whose roots ought not to be disturbed. Our Ornithagalums are now pushing vigorously in the pots as originally started and in these they shall remain with only a top-dressing of rich stuff.

OXALIS.

A most useful subject under glass with culture the simplest. Half a dozen bulbs to be planted in each pot. They need not be plunged under the surface. O. Lutea, fine yellow ; O. floribunda, rose ; O. Boweii, crimson, very fine.

ALSTRŒMERIA.

Does well in doors. A profuse and long enduring bloomer, " with elegant trusses of Gladiolus like flowers in umbels."

PURSH'S JOURNAL.

(*Continued.*)

On the second pond I went on a Granberry marsh, which produced nearly the same plants, as those mentioned on the marsh on Pokono mountain ; Mr. Millbourne told me that he had seen quit white Cypripediums on this marsh & by his account, it seems to be a sort nearly related to the C. acaule. The borders of those lakes are very difficult to come at, excepting on those marshes, where you have to wate through the swamps & mire sometimes to the middle. We went up to the third pond, which is the highest : nothing new, but a species of red currants with hispid fruit, quit new to me ; it grows in wet marshy ground, I found it afterwards in descending from those lakes or ponds quite in a hollow on one of the branches of creek in a marshy muddy rich land ; the berries are very good to eat, as they say ;—Nephrodium Filix mas as I suppose grows here very tall & frequent.—Besides this a variety of the more common ferns. We returned to the middle pond in expectation of seeing deer, but finding none there, Mr. Millbourne being provided with hook & line, made a dryal at fishing, as it were on the top of the mountain—He soon brought out some fine sunfish & gold Pearch & a fish they call here Bull or Hornfish, it resembles a catfish very much & grows sometimes to the lenght of 12 to 14. inches ; the skin is black ; he has 4. feelers above & 4. below the mouth, two of the upper ones are very long, the two breast finns are very hard, & bony, from which it has been calld Hornfish.

On our return from the ponds, we came across a stoud bear, which we killed, but it getting late & begining to rain we were obliged to hang him on a tree & leave him there till the morning next: —Before we reached home we got wet all through & it got so dark that we had a good deal of trouble to come through the bushes without running ones eyes out.

About the ponds Lycopodium complanat. & Circaea alpina, Hydcotyle americana. Drosera rotundifolia were frequent, the latter had the most of her leaves containing a fly or muscidoe which they ketch in a similar manner as the Dionæa does.—I dont think any place can be more infested with muscidoes & gnats or as they call them here Punks, as this country is, the people are obliged to make fires before their doors to keep them out of the houses, & them, who milk cowes are obliged to kindle fire & make a smock to be able to stand milking, in the evening and morning.

28.—This day I was busy in drying & arranging the plants collected since I came here ; Mr. Millbourn went to the place where we killed the bear to fetch him home ; he weighed 208. pound with the skin, his meat tasted most excellent. In a small excursion I made I found plenty of the All-heal & Pyrola secunda beginning to show his flowers. I collected a number of plants of the Viola with thick leaves, to have a close examination of it in the house which made me sure, that it is a new species, very easy to be overlooked by almost any botanist on account of its singular way of flowering ; the fleshy root is full of tuberculis, between which the numerous fibres have their origin, between the footstalks of the leaves on the top of the roots are several lanceolate stipulis, or scales involving the footstalk. From three to 6. leaves spread themselves out flat on the ground, their footstalks are long semi-cylindrical & smooth ; The leaves are ovate, cordate, repand, crenate, nervous ; the sinus on their base small and narrow; the upper side hirsute or covered with scattered single short hair, the underside nearly smooth ; they are of a strong fleshy texture, more so than any of the other species of this genus, to my knowledge ; the flower stem or scape comes out between the leaves & creeps close to the surface of the ground, mostly under cover of the leaves almost in the manner of stolones;

he is cylindrical & sparsedly beset with lanceolate bracteis, of a membranacous texture & mostly a purplish brown colour ; near the end of those seeming stolores most commonly they have a small leaf similar to the longer ones in whose axilla a partial pedunclel is formed, which with its flower on the end bends down to ground & almost covers the flower in the ground : from there the peduncul goes on in a similar manner with opposite bracteis & one partial peduncul on each joint, so that it forms a kind of racem with 3 or at most 4. flowers ; in this manner of flowering it differs from all the rest. The flowers are small & very inconspicuous, they are allways nodding down & never open entirely ; the calyx consist out of 5 unequal leaves in size but equal in length ; they are acute & two or three of them have a projection behind, in the same manner as some of the plants of tetradynamia siliquosa have : they are of a purplish green & very frequently spotted. The 5 petals are lineare & acute : the upper one is the longest, but only equal in length to the calyx, & likewise the broadest, generally white with red & purple stripes, & red or pink towards the point ; the two lateral ones shorter and narrower, white with but little red in them ; the two lower ones very short & very narrow & white. The 5 stamina have purple filaments & large yellow anthers with a conical white projection or process on the top : they are entirely free, the germen is as long as the filament 3-angulare & greenish. The style short & with his hairy stigma only the length of the filament. The capsule is 3-angulare with rounded angles, smooth & considerably large for the size of the flower ; it is green spotted with purple & sometimes entirely purple. The seeds round & white. I call this species, as I really think it to be a new one, from its singular & hidden way of flowering Viola clandestina or if this would not be applicable, I should propose the name, though not used before V. stoloniflora—It grows in rich stony & shady woods.

In the same places I observed another species similar to the former, yet materially different, which I called V. asarifolia in the collection. I regretted very much, not to have been earlyer in the season in this very interesting country ; A monographia of Viola would give a beautifull & interesting work if it were possible to collect them all together, from all parts of the world. as they seem to be very generally dispersed ; I think we could muster above twelve species towards it.—This day kept on cloudy, with showers, & the evening got to be very cold for the season.

29.—I had intented to proceed on my yourney to day, but it looked to much for settld rain, I staid. My intention was to go from here over the high lands which divide the north & southern waters of Susquehannah & then strike to the left down Meshopen creek, where there some New England people settlements are, which would have brought me out below Tyoga point. But by advise of the people who stated the badness & intricacy of the roads besides the temper of those settlers at this time, being very yealous of their settlements, having them lost by a lawsuit, which has made them swear to kill any man, who would undertake to survey the grounds, this made me abandon the project, & I concluded to go to the Big bend & down the Susquehannah to Tyoga.—In an excursion to the woods I found Nephrodium Dryopterioides, Mx as I suppose, I never observed this Fern before.

In the afternoon I went to a place where I understood the Cypripedium spectabile or canadense of Michx grew : I found but one bunch of it ; This beautifull plant is the same I observed last year at Capon springs.

30.—Still rainy ; but looking again noon somewhat better, I took the road ; this led up through winding valleys to the highlands, where I found considerable settlements ; nothing new—The Ranunculus acris is here sometimes so plenty, that it destroyes the natural meadows. I seen whole meadows looking at a distance like a field of Rape in flower, with it. Here I first some of Cistus canadensis in flower :—I had put up about 10. m. from the Big bend, on account of the frequent showers, at one Mr. Carr I seen to day a few plants of Cornus canadensis out of flower.

July 1.—From here I soon reached the Susquehannah : the road leads close along the north side of the river ; Oak & Pine are more prevalent here & along with them the wet spots are more covered with Osmundas, whereas in the Beach woods & similar places where Beach & Hemlock makes the chief timber, the several species of Nephrodium occupy the places of the Osmunda—Pentstemon pubescens & Scrophularia nodosa in great plenty along the banks—I made my way as far as Chenango a very handsome little village.

July 2.—From Chenango I would have had a strait road to the Salt lakes, but my appointed place was at Tyoga. I proceeded on, down the River, Populus tremuloides, Tilia americana—Cratægus Crus galli, Cornus aspera—& fastigiata,

—Thalictrum nigricans—were the plants not observed before. The Banks on both sides of the river alternately are higher & lower & the mountains, especially on the south side—which approach near the river; in some places considerable high. The timber on high places is chiefly Oak, mixed in the most places with pitch pine, more or less according to the soil. I staid this night at Owego, a small village, situated in a very beautifull place. Close to the water-edge of the river I found plants which in foliage appeared to be Potentilla anserina.

THE GLADIOLUS.

BY MR. GEORGE SUCH, SOUTH AMBOY, N. J.

A good deal has been written with regard to raising the Gladiolus from seed, the general summing up of which is that many of the seedlings are equal to fine named French varieties. This is, of course, very good encouragement; but for the benefit of those who want some more definite idea of what their efforts are likely to produce, I write these few hints based upon my own experience.

The seed I used was saved from such good varieties as *Cerise*, *Le Poussin*, *Ophir*, *Prince of Wales*, *Flora*, *Madame de Vatry*, and others of that character; none having been taken from *Couranti fulgens*, *Don Juan*, *Louis Van Houttee*, and such like.

It has been generally remarked that pink will be found to be the predominating color in a bed of seedlings, and this is true; but the flowers will vary so much in shade of color, shape, size, and the manner in which they are attached to the stem, that almost every spike will have a distinctive character.

There will be many reds, crimsons, and scarlets, but comparatively few very bright scarlet flowers; and large, well-shaped, dazzling scarlet blooms, nicely arranged on the spike, will be rare. Some reds and scarlets with large dull yellow throats, will be seen here and there: these are ususally male flowers, resembling in texture the old Gandavensis, though always rather better than this ancestor of theirs.

There will be many more white varieties, more or less variegated, than one would think, and many more light yellow. Among the spikes of yellow, I have noticed that the buds, just when they show color, would lead one to suppose the flowers would be a very rich yellow, whereas they often prove to be so light colored as to be nearly white. A dark, clear yellow is therefore somewhat of a rarity. Even in the long lists of French named varieties, only three or four of this color are really fine.

If seed has been saved from kinds fully as good as those above mentioned, there will be few white flowers not considered worth keeping. In my beds I have always found many that would hold their own by the side of good French kinds, and some that might hold up their heads among best.

Among the rosy colors and shades of rosy lilac will be some lovely tints. To my taste, the very best of the seedlings I bloomed last year, was pure rose color, of that delicious tone noticeable in the flowers of Lapageria Rosea.

All the remainder of the seedlings will consist chiefly of peculiar variations of color, mostly pleasing, but generally difficult to describe. From this class may be expected quite as much satisfaction as from any of the others. Among mine, I have one superb novelty, unsurpassed for size, shape, and vigorous growth. The prevailing color is a very delicate nankeen, flushed with pink; the throat of the flower being rich cream color, and the whole delicately dotted and striped with pure vermilion.

It is interesting to note how great a variety of flowers will come from seed taken from the same pod. All will be quite different, and yet among many, a resemblance will be readily seen that will show them to be related; just as it is in a human family in which no two members look alike, although some points of similarity will run through all of them.

"LESSONS OF THE YEAR."—"DISEASED VINE LEAVES."

BY A. HUIDEKOPER, MEADVILLE, PENNA.

In two consecutive articles in the December number of the *Monthly*, pages 364 and 365, phenomena are accounted for under appropriate heads, that seem to me to admit of a different and better explanation than that given.

Mr. Fendler accounts for the splitting of trees in the winter, by the freezing and expansion of interior sap vessels, having more of water in them than cells nearer the bark. I would ask of him, if the effect is not rather simply one of shrinkage?

Heat and cold are, when excessive, very similar in some of their effects. Now if a green log be laid before a fire it will split at the surface: why? simply because the outside contracts in drying faster than the interior. So when the dry cold air of winter, acts on the outside of a tree, it splits with such force that the crack becomes a deep one; a result just similar to that produced when the disrupting agency is heat.

"J. S. accounts for the diseased vine leaves of N. H. R., over the gravel walk, by suggesting that the conditions gave less of moisture and more of heat. If N. H. R. will examine closely another year, he will probably find it a combined result of heat and insects, the one leading to the other.

The thrip loves warmth, and grows and matures quicker in warm places. I have seen the same results in a cold grapery, where the working of the insect was expedited by the heat of the brick chimney, the leaves being injured sooner, and to a greater extent than elsewhere.

A LARGE BRUGSMANSIA.

BY DR. H. G. LUNGREN, VOLUSIA, FLORIDA.

I have growing in my garden at Volusia, Fla., a plant of Brugsmansia or Datura Arborea, which is two years old from the cutting. I give the following measurements of it:—Height to highest lateral branch 7 feet; circumference of whole plant 32 feet; circumference of stalk at ground 12 inches; same at first lateral branch 10 inches.

This plant has now on it 143 open flowers, and innumerable buds. It grows in what is called "poor white sandy land," such as is pecular to some parts of Florida; has never had a particle of manure in any shape or form, applied to it. Over 100 cutttings have been taken from this plant. It stands about 20 feet from my dwelling, and the perfume at night from it is so powerful as to be quite annoying. It has bloomed three times a year since the first year of its growth. Has stood in open border ever since cutting was planted, and does not suffer from our light frosts. It appears to be steadily growing on, and by next spring I will give the increased measurement.

[We are glad our correspondent has called attention to this old, but beautiful plant. When it comes to be a large bush it must be a beautiful thing. Here in the North it ought to be very common in gardens, as it is as easily kept over winter as an Oleander. The most ornamental things on the beautiful grounds of Mrs. George W. Carpenter, in Germantown, the past summer, were specimens of these. They were about 7 feet high, and loaded with hundreds of their Sweet Bells. The plants however are many years old; still young plants grow up and flower in one year if put in a hot place out of doors and a rich soil. They can be taken up in fall, all the leaves cut off, and put in a common box of earth and kept in any cellar, free from frost.—ED.]

VARIATIONS IN EPIGÆA REPENS.

Read before Philada. Acad. Natural Sciences, May, 1868.

BY THOMAS MEEHAN.

There are yet many botanists who regard variations as accidents. They speak of a normal form as something essential; and departures from their idea of a type, they refer to external causes, independent of any inherent power of change in the plant itself. Hence, when a change of form occurs to them, it is usually referred to shade, to sunlight, to an unusual season, situation, or some geological peculiarity of the soil. Cultivation is denounced as interfering with botanical science; introducing and originating innumerable forms, defying the skill of the botanist to classify or arrange. My experience in plant culture, and as an observer of plants in a state of nature, leads to the conclusion that there is no greater power to vary in the one case than in the other; that there is as much variation in the perfectly wild plant, as in those under the best gardener's skill. To illustrate this, I gathered a great number of specimens of *Antennaria plantaginifolia*, which, though I do not believe has a greater average power of variation than any other plant, affords a good example for the following reasons: The small seeds, I believe, require a clear surface of ground to vegetate, and young plants therefore never appear in a meadow or grassy place. In such positions plants only exist that had a footing in advance of the grass.

They then propagate exclusively by runners. After being two or three years in this situation they form patches of one or several square feet each. Now it is not easy to appreciate a minute difference between one single specimen and another; but when a score or more of specimens of one are matched against a similar number of the other, the minutiæ make an aggregate which is readily estimated. So we shall find in the case of a two or three year old meadow, filled with this plant, that not only are *no two patches alike*, but that the eye convinces us of the fact on the first glance over the field. Plain as the differences thus presented were, I found, however, some

difficulty in describing them in language; and besides being a dioecious plant, there might be brought in the objection of intercrossing between allied species of this or neighboring genera if not of the individuals of the opposite sexes themselves, to account for so many forms. I therefore chose *Epigæa*, as belonging to a natural order exclusively hermaphrodite; containing only one natural species; not very closely allied to any of the neighboring genera, *Andromeda*, *Clethra*, *Gaultheria*, &c.; none of which, at any rate, flower at the same time with it.

On the 19th of April I gathered specimens from sixteen different plants on the Wissahickon without taking any pains to make any particular selection of varieties. The following descriptions show their variations:

1. Tube of the corolla half inch long, contracted in the middle: segments of the corolla broadly ovate, one-third the length of the tube, incurved, pure white. Scales of the calyx two-thirds the length of the tube, narrowly lanceolate, interior ones white and membranaceous with a crimson base.

2. Tube half inch, regularly cylindrical; segments half as long as the tube, triangularly ovate, light rose, incurved. Scales one-third the length of the tube, white coriaceous.

3. Tube quarter inch, thick(one-eighth wide), cylindrical; segments rather longer than the tube, triangularly ovate, incurved, deep rosy pink. Scales three-fourths the length of the tube, rosy red, with white margins.

4. Tube nearly half inch, contracted at the summit; segments very short, scarcely one-sixteenth of an inch, forming nearly five ovate repand teeth, purplish white. Scales greenish white, simply acute.

5 Tube quarter inch long, one-eighth wide; segments lanceolate, erect, two-thirds as long as the tube, rosy purple. Scales brown, not margined, drawn out to a long fine point.

6. Tube quarter inch, cylindrical: segments oblong ovate, recurved, as long as the tube. One of the anthers slightly petaloid. Scales prolonged into almost an awn.

7. Tube much narrowed at the summit, quarter inch long; segments less than one-sixteenth of an inch long, pale purple. Scales greenish brown, very narrow.

8. Tube near half inch, contracted in the middle; segments quarter inch, linear lanceolate, bright rose. Scales half the length of the tube, broadly ovate, membranaceous, simply sharp pointed.

9. Tube half inch, cylindrical; segments quarter inch, of which there are but *three* broadly ovate white.

10. Tube nearly three-quarters inch, cylindrical; segments quarter inch, narrowly ovate. Scales as long as the tube, linear lanceolate, pale green.

11. Tube less than quarter inch, and shorter than the luxuriant foliaceous, mucronate scales. Segments of the corolla two-thirds as long as the tube, broadly ovate, pure white.

12. Tube quarter inch, increasing slightly in width upwardly (funnel-shaped), one-eighth thick at the top of the tube; segments short, ovate, reflexed, light pink. Scales longer than the tube, green, white margined.

13. Tube quarter inch, much contracted in the middle; segments quarter inch, broad ovate. Scales half the length of the tube, brown, with white margins.

14. Tube under half inch, thick perfectly cylindrical; segments quarter inch, broad linear, and rounded at the apex, waxy white. Scales quarter inch long, brown, with membranaceous margins.

15. Tube full three-quarters inch, cylindrical: segments quarter inch, triangularly ovate, pale rose. Scales half inch, narrow and drawn out to an awn-like point.

16. Tube half inch, cylindrical Scales less than one-sixteenth of an inch, broad ovate, green, and barely pointed.

On again examining No. 12, after making these notes, I was surprised to find no trace of stamens, but with the pistil perfect; and on examining the other specimens, I found three out of the fifteen were pistillate also. Another remarkable fact was that all these pistils had the fine cleft stigmas strongly recurved, exposing a glutinous surface; while the hermaphrodite ones kept the apex of the pistils closed. The ovaries of the pistillate forms were also evidently better developed than those in the hermaphrodite condition, and the inference was that the plant was *practically dicecious*.

On the third of May I returned to the locality and found this hypothesis in all probability correct. The pistillate plants were in proportion about one-third that of the hermaphrodite, and could be readily distinguished after the flower had faded by the recurved stigmas above noted.

All the plants that had shed their corollas were pistillate; the apparently hermaphrodite plants having their corollas dry on the receptacles from which it was not easy to separate them—the scales of the calyx and a part of the stem coming away with them. This is so well known a feature of impregnation in the development of a fruit, that I need not dwell much on the importance of this fact, as showing the fertility of the pistillate, and the sterility of the opposite form.

I engaged friends to furnish me specimens from other places. Dr James Darrach finds them, as I have above described, in another locality on the Wissahickon. Miss Anderson sends me ten specimens from Edge Hill, Montgomery County, Pa., amongst which two are purely pistillate, the rest varying much as in the Wissahickon specimens. Mr. Isaac Burk finds pistillate plants abound at Mount Ephraim, New Jersey, but there are abortive filaments without anthers, and he sends me one specimen of this character. Mr. Charles E. Smith sends me a dozen or so specimens from Haddonfield, hermaphrodite, and so exactly alike that they probably all come from one plant. Mr. E. Diffenbaugh sends ten specimens from another place in New Jersey, all with anthers, but varying from nearly none to filaments three-eighths of an inch long; varying also in the proportionate lengths of scales, tubes and segments; but not near as much as in the Wissahickon specimens. Prof. Cope sends samples from Delaware County, Pa. These are varied like the Wissahickon ones; and Mr. Cope remarks to me that the pistillate forms are so distinctly characterized, by the vasiform recurved corollas and other characters, that he can readily distinguish them as he walks along.

Has this peculiarity of *Epigæa repens* been overlooked by the many botanists who must have critically examined it heretofore? Or has the plant reached a stage of development when germs of new forms spring actively into life?

In a paper on *Lopezia*, published in the last volume of the Proceedings, I showed that the sexual organs of that genus were admirably arranged to prevent the pollen of a flower falling on its own stigma. This behavior of *Epigæa* adds another to the list of plants, now so extensive, known to have an abhorrence of self-fertilization. It may not be out of place to hazard a reason for this course:

There would seem to be two distinct principles in relation to form going along together with the life of a species. The tendency of the one force is to preserve the existing form; the other to modify, and extend it to newer channels. The first we represent by the term *inheritance*, the other we understand as *variation*. Inheritance struggles to have the plant fertilize itself with its own pollen; whilst the efforts of variation are towards an intermixture of races or even neighboring individuals, rather than with members of the one brood or family. May it not be possible that at some time in their past history all species of plants have been hermaphrodite? that Dioecism is a later triumph of variation, its final victory in the struggle with inheritance? There are some difficulties in the way of such a theory, as there are with most of these theories; but it seems clear from this case of *Epigæa* that cultivation has not as much to do with changes as it gets credit for, and we may readily believe that independently of external circumstances, there is a period of youth and a period of old age *in form* as well as *in substance*, and that we may therefore look for a continual creation of new forms by a process of vital development, just as rationally and as reverently as for the continued succession of new individuals.

The discovery of dioecism in *Epigæa* is interesting from the fact that it is probably the first instance known in true *Ericaceæ*. In the *Ericeæ* suborder of *Francoaceæ*, abortive stamens are characteristic of the family, and in the *Pyrolaceæ* antherless filaments have been recorded.

SWINDLES IN ORANGE QUINCE.

BY T. T. SOUTHWICK, DANSVILLE, N. Y.

Indignation is from time to time expressed concerning the frauds committed by the sale of "new things" at fancy prices, which prove to be worthless.

Other frauds are being constantly perpetrated in a more quiet way.

Allow me to name one (likely to increase), and place the readers of the *Monthly*, on the guard. The planting of the Quince for its fruit has been largely on the increase for some years past. The demand for plants of "Orange Quince," has exceeded the supply. This fact has been taken advantage of by a set of villians, who sell "Anger's Quince" for "Orange." The temptation will be acknowledged, when we remember that well grown plants of "Anger's" can be bought for $25 per 1000, whilst "Orange" are worth $250 and upwards per 1000.

Allow me to note one of several instances that

have come to my personal knowledge the past season.

In a neighboring county an enterprising man undertook to fill the demand for 'Orange Quince.' To this end, he bought an abandoned and overgrown block of Anger Quince Bushes, at the cost of digging them. Then going to the confiding, surrounding farmers, he sold them at the modest price of Four Hundred Dollars a thousand. One Farmer invested $350, others from $100 to $200 each, in this precious trash. A slight accident—one not likely to again occur—awakened suspicion on the part of one party who had been duped, and the nice little enterprise and the originator were brought to grief. But when it is borne in mind the large difference in the cost of "Angers" and "Orange," and how hard it is to tell one from the other, until years after, it will do for the buyer to be on guard.

It may not be out of place to say that the Angers Quince is not worthless, as many suppose. The French prefer it to "Orange;" it is of higher flavor, and good for flavoring sauces and jellies, and its bad points being a tardy and shy bearer, (I know an orchard twelve (12) year old, not yet in bearing). Tree tender, and fruit not saleable in market.

P. S. I have no Quince for sale.

EDITORIAL.

THE FEEDING ROOTS OF TREES.

It is not without some pride that the Editor of the *Gardener's Monthly* finds so many of his observations and opinions, which, on their first promulgation regarded as wild theories, finally come to be received as scientific truths. He owes his success in these matters to being in no haste to publish his views. In many cases he has spent several years in endeavoring to be *sure of his facts*, before uttering a word. These facts he prefers to gather with his own senses from the great book of nature, rather than to reading about them in the best libraries ever formed. There is no other way in which one can properly advocate a point, if he would not be at the mercy of every critic that chooses to object to him. The only inconvenience is, that pressing our views with the positiveness of one who knows he is right, and believes in the value of what he teaches, we lay ourselves open to charges of vanity, perversity, or notoriety seeking. The following from *Colman's Rural World* is an "illustration:"

> The *Gardener's Monthly* seems to wish to make itself notorious, by advocating the growing of fruit in grass, or having the roots very near the surface, and not to cultivate as we would a field of corn. We consider such advice and teachings a damage to fruit growing. It leads many, whom we think otherwise would cultivate and grow fruit, to meet with failure of time, and *faith* in fruit growing in many sections of our country. This new system of non-cultivation and pruning may answer very well for some limited localities, but for us, of the West, will not answer. To be successful—when our trees come into bearing—they need long roots, that go down into the damp clay, to keep life and vigor in them through our long summers of intense heat and and dryness. A tree to acquire vigor, health and long life, should be *thoroughly* cultivated. How often do we see old and infirm orchards brought to renewed life—recuperated from almost barrenness, to thrifty, productive orchards, by plowing up the grass, manuring and *cultivating* the same.

Now we thank all who point out any errors we may start, as cordially as we value the commendations of admirers. Of course it is pleasant to have these objections made in a friendly spirit; but yet better have an error flayed out of the public body, even though a sugar pill would do as well, than have a festering sore remain.

Now in the extract we have above given, there is nothing much that we can say here without great repetition; of course our readers know that we don't care for the *grass* in an orchard. If this writer chooses to put enough compost on his fruit orchard annually to prevent a blade of grass from growing, we should say he did very well, much better than by letting the grass grow. The grass we have spoken about, is but a *means to an end*. If that end can be better accomplished by other means, so be it.

Now it is strange that this cry about the damage our views about fruit growing *would do* if adopted generally, should come from the West along with another cry that fruit growing *is now a failure*. President Brown, of the Illinois Horticultural Society, says in a recent speech, that Fruit-growers' Societies, originally instituted to tell us "what varieties to plant," now have a graver duty, to tell us "how to grow fruit trees." He speaks of failures every where.

So in the East, the advocates of deep rooting are every where admitting their failure; but we shall not enter into this matter here, our present object being to show where those who think as the writer of the extract above thinks, are *radically* wrong.

Nearly twenty-five years ago we found that the *root fibers* of trees were only *annual*—like the leaves, they died every year. In 1853 we published it as a fact; we have fought it through until we believe it is now accepted as *scientific truth*. They have the same relation to the main roots as the leaves have to the branches, except that while the leaves are the preparers of the food—the cooks,—the fibers are the providers—the husbandmen for the cooks. Just as the branches are of use only as supporters of the leaves, which, like the ancient rib of Adam, are formed by morphological laws out of tree bodies; so the main roots are only of benefit in so far as they afford the material out of which fibers are formed, to hold the tree in position, and possibly, in a very small degree, to draw in moisture.

Remembering this, now take up very carefully a young tree, and we find that the fibers are nearly *all on the surface*, and that they decrease in number and importance with every inch of depth. In the largest trees scarcely a fiber will be found one foot from the top, large roots—tap roots—you may and will find, but no root that is of the slighest benefit to the *nutrition of the tree*. How then a tree can be benefited by the destruction of this large army of agricultural laborers, toiling at the surface to maintain the growing nation thriving in its many industrial occupations above them, we do not understand.

When we look back and see that it has already taken twenty years to have these simple truths generally recognized as correct, we hardly expect to live to see the credit awarded to us of being the founder of an entirely new system of fruit culture; but we do feel that after we are dead and gone, the new generation will wonder why the old one was so stupid as to cling to a system, which they continually acknowledged a failure; which took its rise from, and had no better authority than the fables of Æsop; and which they were shown was clearly opposed to principles, the truth of which they could not dispute.

THE BERBERRY AND WHEAT RUST.

There is nothing more interesting than the fact that practice is so often in advance of science. It is becoming quite common to find matters which intelligent men scoff at as vulgar errors, become admitted as scientific truths. A valuable lesson should be derived from this. Scientific men should feel how little they really know; and, while not more ready than now to admit any thing as true till rigidly proved so, yet be more disposed to aid practical men to prove their facts, than to deride their improbability.

We all know how the very best hot house vine growers of the past generation, laid great stress on the importance of cutting off grape tendrils as fast as formed; and we also know how the younger race, with a smattering of philosophy, have amused themselves with what they called the old fogy notions of their fathers; yet Mr. Meehan has shown in one of his recent papers in the proceedings of the Academy of Natural Sciences of Philadelphia, taking Mr. Darwin's discovery of motion in tendrils for the basis of his argument, that our forefathers were right, and their practice founded on true physiological law. It now appears that the farmer was right when he asserts that the Berberry will introduce rust in wheat.

This has been for ages a topic of universal interest, and has generated quarrels of not much less importance to us, at least, than the "siege of Troy." We came across a case in Illinois last year. A Massachusetts woman brought the Berberry from her old home and made a hedge. Neighboring farmers suffered terribly from wheat rust, laid the blame on the Berberry, and demanded its removal. The lady refused, and the farmers came together one night and dug it all out by Lynch Law. The lady appealed to a higher tribunal. The lady's attorney applied hard for damages; but the jury and judge came near justifying the case, when a number of the old *Genesee Farmer* was produced in court, wherein it was shown *conclusively*, that the Berberry rust and the wheat rust were two distinct plants. Thus the lady gained her case. We should have so decided also at that time, and even now we are not taught better; for it is still a fact that the two rusts are very distinct forms—the great lesson is, that though two distinct forms, they are both the same thing for all. During the few past years Prof. Oersted, a Danish botanist, has been studying the history of

the lower order of fungi, and he has discovered that some species have the power of producing different forms in *alternate generations*—that is that there are two species bound up in one individual, and that each species enjoys the privilege of alternately producing its spores, yet these spores though from one plant, will only germinate and become parasitic on its own favorite victims. Thus he has proved that a little parasite, which breeds on the apple and the white thorn, and has been known as *Rœstelia pencillata*, produces at its first crop of spores the germs of another "genus," *Podisoma clavaræforma*, which choses to grow on the Juniper; *Podisoma Sabina* which grows on the Savin Juniper, and *Rœstelia cancellata*, which is a Pear parasite, also have a community of origin. *Podisoma juniperinum* also on the Juniper, and *Rœstelia cornuta*, are also corresponding forms of one another, as is also the *Puccinia graminis*, the red rust of wheat, and *Æcidium berberidis*, the red rust of the Berberry.

We find these interesting facts in the December number of the *American Naturalist*, referring to Dr. Oersted's papers in the proceedings of the *Royal Danish Academy of Science* of Copenhagen.

The only thing which may not be clear to the general reader, is the exact meaning which is to be placed on the phrase, *alternate generations*. Mr. J. L. Russell, Professor of Botany to the Massachusetts Horticultural Society, is a deeply interested student in this branch of science, and we have obtained from him a fuller account of the process than is given in the *Naturalist*, and will be read by our readers with deep interest.

Mr. Russell says:

The Puccinia graminis, (and a few other species of Puccinia,) infests the stems and leaves of grain or "corn," in "English." It resembles a slit or crack filled with a black dust; each particle of this dust is a compound spore of two parts. When this germinates it pushes out of its upper segment a thread which eventually divides into segments, and produces spirals bearing *sporidia*. These sporidia find their way to the leaf of the Barberry, and, germinating, in turn enter the stimates by a filament, which growing into a *Mycilium* feeds upon the contents of the cellular tissues. From this Mycilium springs the Æcidium, at first a pale spot under the cuticle, and developing into a cluster of fringed cup-like bodies or sori, each filled with orange-colored ovate spores. These spores on germinating do not produce Æcidia, but a second stage of growth—once making the genus *Uredo*, consisting of clusters of *little irregular* cells, filled with simple oval spores, composing a leniformed dish or stoma. The spores of the Uredo on germinating attack the leaves of the Graminea, and by a mycilious system riot on their tissues until the perfect or finished condition ends in Puccinia with its *two pointed and pedicelled* spores, and the circle is complete.

Puccinia graminis has three (3) stages of growth, viz:

1. Æcidium.
2. Uredo.
3. Puccinia.

The grasses are attacked by other Puccinia, such as P. coronata, P. straminis, (Pers,) which in the Uredo and Æcidium stages appear on the Boraginous plants, on Rhamnus Parraxicum, Urtices, Ranunculus, etc., etc., and according to Luthen's, in American Naturalist, l. c., Prof. Oersted has found a sexual (barren) condition of Rœstelia, (a genus of Æcidiacious plants,) originating from Podisoma, which in shape of spores reminds us of Puccinia.

This seeming anomaly of a perfected condition, finding its early growth dependent on quite a distinct plant, from which it is itself parasitic, has been termed by de Bary and Tulasne heteroique; its importance in an agricultural view, must stimulate inquiry into what are the several plants in which the heteroique or heterogenetre condition obtains.

This interesting subject is treated at length in Annales de Sc. Nat., for 1866, by Professor de Bary, and in Comptes Rendus, &c., Berlin, for 1865.

CUT FLOWER STAND.

We give below sketches for a very pretty and convenient flower dish, designed by Mr. C. W. Trotter, a distinguished amateur in gardening, of our city.

The stand is the chief point of interest, and consists of two surfaces of galvanized wire netting, the meshes occupying about three-quarters of a square inch. The lower surface is about one inch below the upper, and its use is to hold the stems in position after they have been placed through the upper ones.

The merit of the plan is, that the flowers can not only be fixed firmly in position, but that the stand can be lifted out entirely every morning and the water changed, which ensures the preservation of the cut flowers to the longest possible period.

Fig. 1 shows the dish with the interior stand, ready for the reception of the flowers.

Fig. 2 shows the interior stand with its double setting, through which to set the flowers.

The dish is about 12 inches by 8, and about two inches deep, of tin, painted tastefully.

We are much obliged to the kind friend who handed us the stand from which we make our illustration, for we regard it as one of the most useful parlor ornaments we have lately seen.

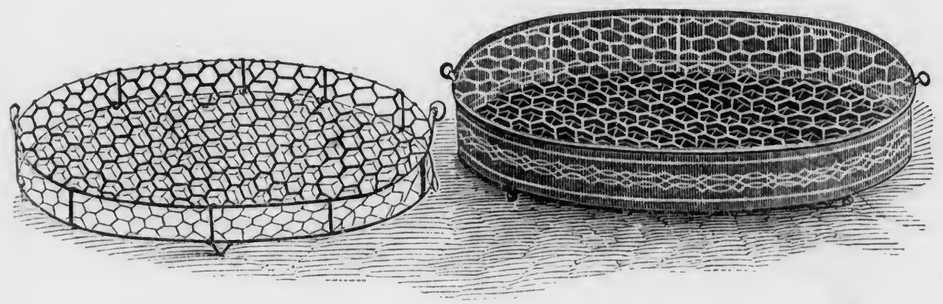


Fig. 2. Fig. 1.

SCRAPS AND QUERIES.

BIGNONIA CAPREOLATA.—A correspondent at *Tipton, Ind.*, sends us the following about a climber, which is the Bignonia Capreolata. We give what he says about it in full, in the hope that it may lead to a better appreciation of a very beautiful but much neglected vine.

"Again I come to you for information; may I get answers to my "queries in the February number of the *Monthly?*"

In the White River Valley in Southern Indiana, I found this fall a plant climbing up trees to the heighth of from 30 to 40 feet; the same seems to belong to the Bignonia tribe, although the leaves differ materially from those of other species of that family. The foliage of this said climber hangs on the vine till late in the fall, and was, about the 1st of November, as fresh as in midsummer. The leaves are from 5 to 7 inches in length, and 2 to 3 inches wide; on the upper side they are a glossy dark green, while the underside of the same are purplish green. The seed vessels, which were mostly hanging on yet, are about 8 inches long and three quarters of an inch wide, not rounded like those of the Bignonia radicans, but flat and of a light leather color. I made a rough sketch of part of a vine, exhibiting the leaves and tendrils, which may assist you in identifying the plant and giving me the botanical name thereof.

In the same neighborhood I also found a species of Orchids, here popularly known as "Adam and Eve." The sketch I made of it has been misplaced, wherefore I cannot send it now. Do you know a plant by that name and what is it botanically? Has it any value as a flowering plant?"

[Some of the Aroidæa are called "Adam and Eve," as well as many other plants. Some further clue would be necessary to name it.]

GLADIOLUS BULBLETS.—*G. C. M., Philadelphia*, asks: "I notice in a book on "bulbs," that the author states that the little bulblets from Gladiolus should be kept over one season—to insure the growth of all—that if planted the first season after production, not one in a hundred will grow. This seems so unnatural that I desire to ask for your experience. Have no doubt others would like to know too?"

[We keep them damp all the winter by mixing

them with earth in a box, put them in a cellar, and they seem all to grow very well. That they did not grow under a year in the experience of the author of "Bulbs," was owing doubtless to some other circumstance, and not merely a question of time.]

The Salem Grape seems to attract attention. The Rochester *Evening Express* says of the Exhibition of the New York State Grape Growers' Asssociation :

"T. L. Harris, of Salem on Erie, near Brocton, exhibited the Salem, one of Rogers' Hybrids, and said to be his best. The fruit is delicious. Mr. Harris has 30 acres planted with this variety, and it is the most vigorous and uniformly healthy and hardy of any kind grown in his extensive vineyard. It will be extensively fruited next year, and we think the demand for it will rapidly increase."

And we noticed a similar paragraph in the Painesville, O. *Telegraph*, about its exhibition there at the Ohio Lake Shore Grape Growers' Association.

Raising Gentians from Seed.—*F. S. Tipton, Indiana*, writes :

"What may be the cause that, with all possible care, I have not yet had success in raising the Gentiana acaulis from seed ? For the last five years I have been buying and sowing, (in hotbeds and the open border,) the seed of this lovely plant, and have not yet had the good fortune to see a single seed of it germinate. Can you explain this, or advise a special mode of treatment of this seed ? Or, if not, can you inform me of whom I could get plants, as I like the Gentiana acaulis so well ?"

[Possibly the seed have not been properly fertilized, although apparently perfect. Have any of our readers been able to raise Gentian seed ?]

Change of Firms.—Mr. E. Bronson retires from the firm of *Bronson, Graves, Selover & Co.*, of Geneva, N. Y., and, though going into business on his own account, leaves his good wishes with his former co-laborers.

Mr. Knox, of Pittsburg, gives up the seed business and seed store in that city to his son, who has practically had charge of it for a long time. We know the young man personally, and feel sure the reputation of the father will suffer nothing at the son's hands. Mr. Knox, the elder, will of course keep on with the small fruit culture, in which he has so well earned a fame.

Cranberry Culture.—*Mr. F. Trowbridge, of New Haven, Conn.*, has issued small pamphlets on Cranberry culture, which he sends free to all who are interested in the subject.

American Evergreens.—We suppose it is generally known that Messrs. Douglass & Sons, of Waukegan, Ill., are successfully competing with European nurseries in the raising of young evergreen seedlings. We are glad to hear that they feel very much encouraged. We gave a call there last year, and calculated that there must be *thirty miles* of seed beds if stretched out one foot wide. We never expected to see so great a success.

Death of Mr. Thomas Affleck.—Our readers will be sorry to learn of the death of this gentleman, one of our earliest contributors, and always a warm friend of the *Gardener's Monthly*.

He was a native of Scotland, but settled many years ago in Mississippi, and had his whole heart and soul bound up in Horticulture, and what he believed to be the interest of his section of the country. For these he seemed almost to live ; and we have no doubt that the present state of affairs, so different from what he would wish them to be, had much to do with the congestion of the brain, of which he died, at his home at Brenham, Texas, not much beyond middle age.

We always felt that we could very well afford to let our friend enjoy his decided idea of things, in view of his warm-hearted nature, generous impulses, and enthusiastic devotion to every thing good and ennobling as he considered it to be ; and feel that in him, not only the horticulture of the South, but of the whole Union, has lost a distinguished friend.

Tomato Sugar.—*Mr. Joseph S. Williams, Cinnaminson, N. J.*, writes :—It is no uncommon yield to take 1000 bushels of tomatoes from an acre, and that 100 bushels will press 4000 to 5000 gallons of juice, which, if distilled after the proper ingredients are added, with due time to complete fermentation, from 500 to 700 gallons of proof spirits, which have, by liquor dealers not knowing the liquor, been pronounced new peach brandy, apple brandy, &c. I have made it an object to get the opinion both of the physician and liquor judges ; and believe it to be a liquor which is healthy and medical, and can be manufactured at lower figures in larger quantities, and with tenfold the certainty of any other fruit spirits, and must in time be the great resource for obtaining alcoholic spirits, as there is no crop which will yield as many bushels per acre with same certainty, with as little expense.

State Entomologist of Missouri.—Mr. C. V. Riley's selection to this office seems to give general satisfaction. A Western paper says :

"We have been truly astonished at the degree of interest which has been manifested in his work, and the general approval which his labors have met with, not only in our own State, but in surrounding States. It has proved the most popular act of our last Legislature, and we hope the coming Legislature will establish the office on a permanent foundation "

Destruction of Insects.—Immense numbers of insects might be destroyed in a garden or orchard, by using bottles of sweet liquid systematically. This is quite common in England, where they do not let every fruit enemy run riot, and then sit down and cry about having no crops ; but work to get the good fruit they boast of.

Dishonest Dealers.—A Tennesee correspondent writes, that he sent $20 to a firm in New York for seeds a year ago. He received an acknowledgment that the money was received, but cannot get any other satisfaction. He adds, that he will send a full statement of the affair to us if we will publish it.

We do not think this will help our friend to get his money back. He had better send the acknowledgment to a collecting lawyer, and let him sue for the return of the money. Fairthorn & Rand, of Philadelphia, is an honorable law firm of this class. It is best never to send money to any one except in a draft or Post office order, so that proof can be made that money had been sent.

Artificial Fertilizers for Strawberries.—*G. C. K., Washington, D. C.*

"What commercial fertilizer is best to use on a proposed acre of strawberries in the absence of barnyard manure or ashes ? Neither of the latter can be obtained in suitable condition or quantities."

[We have found strawberries very much benefitted by guano sowed over the beds soon after the leaves have pushed, and just before a rain.]

Parasite on the Pear.—*S., Dansville, N. Y.*, says : (1) I send by this mail a pear stock, having on it a queer parasite plant. What is it ? A number were found near each other. (2) If one plant will grow and live independently on the stock, why will not some other form grow on the *leaf*, and cause its blight ?

[1. The parasite is the Dodder, a fine thread-like plant, which first germinates in the earth, and lives there until it finds a plant to climb over, when it cuts loose from the earth and feeds altogether on the kindly aid which it found in "getting up in the world." It can only propagate from seed, and cultivators should watch for its appearance, and destroy it early, before it has a chance to ripen its seeds. It will be a pest to the pear seed grower, if it gets ahead. It evidently is taking a liking to the pear, as we have seen it in many seed beds the past year.

2. Your inference is correct. Indeed, we suppose a man can now scarcely lay claim to intelligence who does not know that the leaf blight in the pear, so called, is nothing else but the growth of a parasite plant. This view, originating in England, with Rev. Wm. J. Berkeley, early commended itself to our approval; and we look with pleasure on the influence which the *Gardener's Monthly* has had in directing the American people to a knowledge of this fact, which is destined yet to have a marked influence on successful fruit culture.]

Deaths of European Botanists.—Our foreign exchanges notice the decease of some distinguished botanists.

Von Martius.—Died on the 13th of December, at Munich, aged 75. He is best known by his magnificent publication on the flora, the geography, the political economy, and other matters connected with Brazil. His monograph on Palms, his "Flora Braziliensis," and scores of other publications, not forgetting his treatise on the potato disease, amply justify the reputation in which he was held. He was born at Erlangen, studied medicine in the University of that city, and afterwards traveled in Brazil, and on

his return published the fruits of his journey as above mentioned.

Pœppig.—Dr. Edward Pœppig died on the 4th of December, at Leipsic. He was born at Planen, and was 70 years at his death. During the interval between 1827 and 1833 he made extensive explorations in Chili, Peru, and the Amazon country, the botanical results of which were published by him, in conjunction with Endlicher, in the "Nova Genera et Species Plantarum quos in regno Chilensi, Peruviano, &c ," a valuable work, illustrated by 300 colored plates of new plants. After his return from America he occupied the chair of zoology at Leipsic.

Timber Growing at the West.—Some of our Western horticulturists are earning the title of public benefactors by their labors in behalf of tree planting. D. C. Schofield, of Elgin, Ill., is conspicuous in this good work.

We see also an excellent series of articles in the *Omaha Herald*, by Mr. J. T. Allen, on the same subject.

Influence of the Stock on the Fruit.—The *Gardener's Chronicle* notices the fact of an apple, supposed to be small naturally, suddenly assuming the character and proportions of a first-class fruit, by being grafted on a sort of "Pearmain." We find in America that some pears are thus influenced. For instance, the Duchess D'Angouleme pear is almost worthless on thepear, but tolerably good on the quince; and other instances will suggest themselves to fruit growers; but yet the matter is worthy of a much closer examination than has yet been given it.

Horticultural Party for the South.—Hon. Marshall P. Wilder, and Messrs. Barry, Ellwanger, Manning, and others, have been enjoying themselves by a trip South. No doubt they will find a return favor in a liberal attendance of Southern friends next fall, at the National meeting in Philadelphia.

It will gratify the many friends of Mr. Wilder to know that, notwithstanding his great age, he is in excellent health, and working at his favorite pursuits with a will. We see by the papers that he presided at the annual meeting of the New England Genealogical Society recently, of which he has been for many years annually re-elected President.

Prince Edward Oats.—We have a sample of these from Messrs. Landreth, and feel that a crop of just such grain as this would make the coldest farmer's heart warm with enthusiasm. It is only recently that improvement has been started in the oat. It seems to be successfully prosecuted.

Our Thanks are due to many friends who, at this season renewing their subscriptions, kindly add good words. Especially do we thank those friends who, beside this, have showed where, in their view, we might add to the value of our magazine. Any one may compliment, but only a true friend thinks it worth while to criticize. We cannot always carry out suggestions made, but we sometimes may, and are therefore very glad to have them made to us.

Wine from the Franklin Grape—A Western Pennsylvania correspondent sends us a sample of wine only three months old, which we have placed before good judges, who consider it equal to much of the high brand European clarets. In our friend's hands the Franklin seems to be a very valuable wine grape. Here it rarely produces a berry, through some imperfection in the blossom.

Tomato Trellises.—Samuel Allen says, on the Tomato Trellis question:

"I don't feel as justice was quite done me: since the sun is admitted generally to be, and in the editorial on that article, is "*supposed to be*" the great flavorer. Flavor was the main point in the argument, I think; but I am satisfied. I should like very much to see them trained, and bearing in such abundance as stated in the *Monthly*. and would gladly adopt the pole system, if that is the cause of the *enormous yield*."

The Thornless Honey Locust Tree.—A correspondent in the *American Naturalist*, wishes to know if it is an unusual fact to find the honey locust without thorns—as he has found four trees on his farm, with no thorns upon any of them. The editor of the *Naturalist* answers: "A very obscure form without thorns, which by some is supposed to be a new species, has been known to exist in the Western States."

It does not seem to be generally known that seedling honey locusts, though the seed be all taken from one tree, produces plants varying from very thorny to unarmed. It is no doubt owing to varying constitutional vigor. We believe the most productive trees produce the fewest thorns. Many individual honey locusts have imperfect flowers and perfect few seeds; these, we think, have the most thorns. At one time the thornless forms were supposed to constitute a distinct species, and it was called *Gleditschia inermis*, but the facts above given have dissolved the species.

Inside Grape Borders.—*Enquirer, Danville, Pa.*, writes: "Will you kindly inform me through the medium of your *Gardener's Monthly*, if it is in your opinion advisable to make an inside border for grape culture in this country? I am situate in a hilly district in the State of Pennsylvania, and am following out the practice as in England, which is in every way a success. I have been repeatedly told by a person in the nursery business, the same thing will not answer here. I cannot ascertain the reason why, only that this individual has seen a place where an inside border failed. Now, I should be greatly obliged if you or any of your numerous correspondents could inform me if such a failure is general in the States, and if so, why is it that a vine will not answer as well, or better, with inside culture, with good drainage and a good border, than with the same preparation and the roots on an outside border."

[Inside grape borders in the United States are found unnecessary. They are a heavy expense, and it is found that the roots will not stay in them, if by any possibility they can get into the open air. Our dry climate makes it necessary to water these inside much more than is done in England, and there is danger, unless the border is *very well drained*, which is rarely done, that the soil will "sour" under this treatment, when mildew, shanking, and rot, invariably follow. If our correspondent makes the *drainage good*, he may succeed, but it must be done *better* than ninety per cent. of those we have seen.]

J. A. A., Kingston, Canada, says: "I should be deeply grieved to think that the editor of the *Journal of Horticulture* could have so descended from his high position of truth and impartial arbiter, as to act in the manner charged against him by your correspondent, and hope that he will explain the circumstances to us all; for no man should be above exempting himself, and showing the public that he is above suspicion on all grounds of having but honest judgment. If he shows that this is so, you ought to help him to a fair hearing, and set him right with your correspondent and the public. This will redound to your honor and is dictated by conscience."

[We have no personal matter in this case either way. It was sent to us by a highly respectable correspondent, as a matter of great public concern, and we could see no ground for refusing its publication. We shall very cheerfully give place to anything that will place the matter in a better light.]

Seed Drill.—S. Allen says:

"I notice in a late number, an inquiry for a seed drill for apple and osage-orange seed. I have been using a drill for two years of my invention, and which has lately been patented. The *necessity* of finding some good plan for distributing guano and other special fertilizers, evenly and rapidly, and without regard to winds, led to its invention. I have sowed all my peas and beans, and special fertilizers, with it for two years past, also turnips, &c. I think it perfect for everything between turnips and seeds, one-half inch in diameter, inclusive. In sowing fertilizers it rejects all lumps more than one-half inch in diameter, never clogs, always sows evenly, and will sow from 1 pound to 1000 pounds per acre, with no change but turning the set screw. It is simple, efficient, and inexpensive. I think they will cost near $20. They hold 12 quarts of seed, however, or 25 to 30 pounds of fertilizer, and do not get out of repair easily. Pushes very easily when full, &c. But too much already. I intend getting some up during the winter."

Late Blooming Apple Trees.—*F. S., Tipton, Ind.*, says: "In reply to a query as to a preventive of "apple blossoms being destroyed by spring frost," you advise the planting of late blooming varieties as the surest remedy, and name Raule's Janet as one of those varieties; allow me to name another late blooming variety of apples, the "Borsdorfor," one of the best apples in existence, it being of the finest flavor, and keeping longer than any other apple known to me. The tree is hardy and prolific, and the fruit succeeds equally well on standard or dwarf trees. The apple originated in my home country (Germany), and has not, to my knowledge, been imported by any nurseryman, except Messrs. Ellwanger & Barry, of Rochester, N. Y., who could, after having tried the "Borsdorfor" in

this country, give reliable testimony in reference to the good qualities of said variety, especially as to their late blooming."

[We have so often heard this apple praised by Germans, that we imported a few, a few years ago, which have not bloomed yet. We are very glad to hear that in addition to its other merits, it has another, unknown to us before.]

ZINC LABELS.—A correspondent enquires where he can procure the ornamental printed zinc labels, which we noticed in our paper recently. The circular, we believe, contained no address, but we have some samples from Hon. J. D. Defrees, Congressional Printer, Washington, D. C., who could probably give the desired information.

THE MAIN GRAPE.—A correspondent in our last number, complains, among other things, that a contemporary should editorially say, "The Main Grape—the finest grape now grown in the United States, for domestic use. See advertisement," while knowing that it was nothing but Concord. Since this article appeared in our columns, some Boston friend sends us the November number of the magazine referred to, with a paragraph marked on page 320, wherein the editor says the grape is the same as Concord. So far as this may indicate a disposition to repair a great wrong done the public, it is but just that our contemporary get the credit of it.

THE BLUFFTON WINE COMPANY.—By the report of this Company, we see that Mr. Samuel Miller leaves the office of Superintendent, and we believe starts grape growing on his own account.

BOOKS, CATALOGUES, &C.

GARDENING FOR THE SOUTH. By W. W. White, New York; Published by Orange, Judd & Co.

This is a revised edition of an indispensable work. Mr. White, the author, died during its progress, and it was finished by Mr. J. Van Buren and Dr. James Camak, two well known names, distinguished in southern horticulture. A portrait of Mr. White is given as a frontispiece.

The most striking feature of the work is its peculiar practical character, and yet combined with a common sense philosophy, which after all is not common, at least in works of this kind. Mr. White seldom indulges in the reasons for his rules, generally resting sufficient with plain directions for doing what he has already done; but when he does depart from this plan, the scientific elucidations are generally clear.

It is very interesting to note in following him through, that the operations of southern gardening are very similar to those in vogue at the North; and the crops and kind popular here, are equally so there. The chief difference is in the time to work, usually a month earlier or later, according to whether it is a hot or cold country plant which is to be operated on.

It is also very easy to see that the author did not complete his own work, and we can readily enter into the delicacy of the position assumed by his two friends. No man but an author can do justice to his own theme. To alter or add but a little, does not do justice to the editors; to do more, they endanger the reputation of their friend; and yet we hardly think, if Mr. White were now living, he would totally ignore the existence of that annoying plague to the pear culturist, the leaf blight; or suggest as the most reasonable cause of fire blight that the pear had got a poison virus through its whole system, through the "unnatural practice" of budding on the quince.

We also doubt whether in the face of such successes as have been reported by Mr. Berckmans and others in the South, he would pronounce grape culture a failure, except with the Scuppernong; or allow his usually cautious statements to be weakened by giving *two hundred and fifty bushels* of grapes as a produce of one Scuppernong vine in one year. Again, he might have believed at one time that hermaphrodite strawberries will only produce a good crop in favorable seasons; that it is to the pistillate varieties, fertilized with the hermaphrodite, that we have

to look for large crops of fruit, but scarcely think so now; and pen the remarkable conclusion, that "most of the old ones are now superseded by new and improved varieties, among which stand pre-eminent Wilson's Albany, Jucunda, Agriculturist, Dr. Nicaise, Downer's Prolific, McAvoy's Superior, and some others," none of which but the last are pistillate, and that last not by any means popular.

All of these little antedeluvian ideas we regard as irreparable, from the great horticultural loss of the author, while at his task, and do not by any means detract from the value of the book, which is equal in interest to any which has come on our table for a long time, and which we all of us will cherish as the last legacy of a good man, to the cause he loved.

In looking over the list of garden implements, we are reminded of what we have several times intended to call our readers' attention to—the Mendenhall Dibble, figured in our first volume, and which we here reproduce, but which seems to have been overlooked by cultivators.

It is a flat dibble, and made of polished steel, and we regard it as one of the most useful implements ever invented. No one who has ever used it but would vote to consign all the round dibbles to the "tomb of the Capulets," if, indeed, he cared aught where they all went to.

GUIDE TO THE STUDY OF INSECTS.—By A. S. Packer, M. D. Published by the Salem Institute, Mass. We have before noticed this very useful book. Part 5 is now before us.

HEARTH AND HOME.—We noticed the prospectus in our last, and now have several weekly issues before us. The first number was not above criticism. It was not easy to understand how a vegetable garden could be "improved" by cutting it up into triangles, which no gardener or ploughman could *work*, however pretty such a plan might look on paper; nor was it clear to understand how putting "crocks" in a flower pot for drainage could be a *positive injury to the plant*, although it may be questionable whether in very small pots it has much value. The succeeding numbers, however, contain so much of real value, that we feel it would be unjust to dwell on its weak points.

We have long believed that there was a great want of a family paper, which should carry horticulture into the most cultivated drawing-rooms, and commend itself to the highest order of the literary intellect. *Hearth and Home* does this in a great measure, and we wish it every prosperity and success.

THE DIXIE FARMER.—Every year during the past few years, so many new agricultural papers have started, that it is hard to keep the run of them all. Some maintain their existence with difficulty, others seem to fill a want, and go on swimmingly. Amongst these last is the *Dixie Farmer*, of Nashville. It had a "hard" look at first, but there was originality about it which was a good augury of success. So many like to imitate others. If one paper calls itself "Jacobs," we then have the "*original* Jacobs," the "*original* original Jacobs," and so on "*infinitum*." These gentlemen boldly launched out as the "*Dixie Farmer*," cutting adrift from all other bases, and going out on a career of their own. Paper, printing, matter, everything has been gradually getting better and better, till now we have it with a very neat heading, as neat and as charmingly original as its name. We admire this honest look, and feel it will have all the success its best friends can wish.

NEW AND RARE FRUITS.

GISBORNE PLUM.—Of Plums, one of the principal varieties cultivated by Mr. Dancer is Gisborne's, a rather shabby-looking, medium-sized, oval, yellow Plum, with a rather firm yellow flesh, not very juicy; neither is it of a very excellent flavor in general. In the past summer, however, I tasted some fruit which were very fine indeed, and they were of an extraordinary size, although the trees were all very heavily laden with the crop. They were so large and so highly colored that they could scarcely be distinguished from the fruit of the Jefferson. The flesh parts freely from the stone, whereas the Jefferson is somewhat of a clingstone.—*English Journal of Horticulture.*

THE STARK APPLE.—Was brought to the notice of the Ohio Pomological Society, in 1861, by H. P. McMaster, of Delaware County. It was at first thought to be identical with the Liberty, a seedling of that County, but was soon found to be distinct, and being highly recommended by Mr. M., became quite largely planted in his locality. The tree is a vigorous, upright grower, bears very early, and continues healthy, bearing large crops to an old age.

The fruit resembles Raule's Janet somewhat, but is larger, is as good quality, and keeps until other apples are mostly gone, when its size and fine appearance, make it valuable for market. The fruit may be used in December, but keeps well until June.

[We have the above note, with a box of the fruit from Mr. Hanford, of Columbus, Ohio. It is a valuable variety, and we are glad to see it coming into general notice.—ED.]

TENDER SKIN APPLE.—Supposed to have originated in South Carolina, and received from J. S. Downer & Son. Fruit medium, flattened, conical irregular, surface smooth, waxen-yellow, covered with lake; splashed darker, overspread with a heavy bloom; resembling Northern Spy in its coloring; dots scattered, gray; basin abrupt, eye medium, closed; cavity wide, green; stem long; core regular, closed; seeds long, plump, dark; flesh deep yellow, breaking, tender, fine grained; juicy; flavor, sub-acid; rich aromatic. Use, table; quality very good; season early winter.—*American Journal of Horticulture.*

THE PRESIDENT WILDER STRAWBERRIES.—As we have already informed our readers there are two Strawberries so named—one American, one European.

The January number of the *American Journal of Horticulture*, gives sketches of each so that confusion may be rectified somewhat.

The American is ovoid, from the colored figure, appearing like the Austin or the Shaker. The European is long, with a neck more like Peabody.

NEW AND RARE PLANTS.

RHODODENDRON FRAGRANTISSIMA.—Rhododendron Gibsoni is well known in gardens as a hybrid between Rhododendron and an Azalea. It will be seen by the following note by Messrs. Rollison's of Tooting, London, that this has again been made to hybridize with the Himalayan Rhododendron Edgworthii. If there is no mistake about the pedigree, it is a great blow to the theory, that hybrids are infertile. Of course it will not be hardy in the Northern States, but will be a valuable addition to our greenhouses. We hope some of our enterprising importers will soon get us a plant to look at.

"This splendid Hybrid Sikkim is the result of a cross made between R. Edgworthii and R. Gibsoni, the flowers partaking of the delicious fragrance of the former, while the plant retains the shrubby habit and abundant flowering qualities of the latter. The flower, which is of great substance, and measuring upwards of 5 inches in diameter, is of the purest white, with the exception of the upper petal, which is lightly spotted with ochre; the back of the flower is nevertheless very beautiful, being most delicately pencilled and shaded with rose on a glistening, alabaster-like ground.

From the splendid habit and profuse blooming qualities of this Hybrid, we feel confident it will prove a very formidable rival, as an exhibition plant, to the Azalea indica, comprising, as it does, the same freeness of growth, good habit, and free-flowering qualities, accompanied with one of the most exquisite perfumes it is possible for any flower to possess. It was awarded a First-class Certificate by the Committee of the Royal Horticultural Society at Kensington, and has since been admired by all who have seen it.

BOUVARDIA ELEGANS.—Originated last winter in a "sport" from *B. Hogarth*, which it resembles in color, only the shade is brighter and clearer, and may be described as a light scarlet carmine, but its extraordinary novelty and merit consists in its immense size of flower and truss, which far exceeds that of any other known variety—many of the trusses measuring from four to five inches in diameter. It has also the valuable quality of coming true from the root cuttings.—*Peter Henderson's Catalogue.*

DOMESTIC INTELLIGENCE.

DWARF CRAB APPLES.—M. A. McMasters, of Darien, Walworth county, Wis., raised this year sixteen beautiful apples of Paradise, a species of large Siberian crab apples, on a tree only *six inches high!* This remarkable fact is vouched for by responsible parties.—*Western Paper.*

GEORGIA DRIED PEACHES.—The Rome *Courier* says, 152,556 pounds of dried peaches have been shipped from that city, which at ten cents per pound, were worth $15,555,60, and the crop is not yet half in. The Marietta Journal says an equal amount has been shipped from that town.

GAS LIME AS A MANURE.—The Wisconsin *Farmer* devotes a chapter to the consideration of gas lime as a manure, and the proper time for its application. The lime, taken fresh from the gas works, contains sulphur in the form of a sulphite or hyposulphite of lime, and, in this condition, is a deadly poison. Being soluble in water, it is carried down to the roots of plants by the rain and kills them—if the supply be large. If left in a heap, for several months, or spread upon the ground in the fall, the elements will make such changes in it as to render it conducive to the growth rather than to the death of plants.

MOUNDING UP PEACH TREES.—The mounding system was first practiced, so far as I know, by Isaac Bolmar of Warren county, Ohio. I visited his orchards some years ago—acquainted myself with his system—and concluded to try it upon my orchard of 4,000 fo trees—then one year planted. I plant my trees in the fall, and in the spring following cut them back to six inches above the bud. The tree then instead of having one body has several—from three to six. The second summer I plow both ways, turning the furrows toward the trees. The men follow with shovels, throwing the loose soil around the tree to the height of about one foot. In the fall I cut the trees back, taking off about one-third of the year's growth. The next spring or summer I pursue the same method, raising the mound about one foot higher; cut back in fall, and the third summer repeat the process, raising the mound another foot, which finishes the job. The mound will then be about three feet high at its apex and six feet in diameter at its base. The mounding need not be done in the summer, or at any particular season; it is as just as well done in the fall when the hurry is over. The dirt is never taken away from the trees—in fact it cannot be removed without injury to the tree—for young rootlets each year keep climbing up through this mound. I had occasion to remove one of these mounds a few days since and found it a mass of healthy roots.—Correspondent of *Journal of Agriculture.*

KENTUCKY APPLES.—The *Dixie Farmer* says one of the handsomest collections ever seen in the South or West, was contributed to the late exhibition at Nashville, by Messrs. Downer & Sons, of Todd county, Ky. It embraced 104 varieties. The first premium of $20 was awarded them.

THE HOME OF THE CONCORD GRAPE.—A correspondent of the *Journal of Horticulture* says Mr. Bull has raised some valuable seedlings from the Concord, of which the Cottage and the Una are esteemed the best.

A NEW POTATO.—Mr. Heffron say in the *Journal of Horticulture* that the foliage of Early Rose burned last year slightly, and that his "Climax" was unaffected.

VICTORIA REGIA.—This was on exhibition at Nashville, from the Insane Asylum, where grown, as Mr. Sharkey assures us, without a particle of artificial heat. The leaves were over six feet in diameter, forming a perfect circle. There were three blooms of proportionate magnitude and richness. We have never heard of this great flower being grown with such success without artificial heat, in so Northerly a latitude as this, and doubt if it has ever been done. Mr. Sharkey may well feel proud, therefore, of his success.—*Dixie Farmer.*

POMOLOGY IN SPAIN.—Mr. Cabot, writing to the *Journal of Horticulture*, says, apricots are plenty in Spain; figs flourish luxuriantly. Pears are said to be very good. Clingstone peaches are generally grown, but not good; but in Grenada they have better kinds. Pomegranates, almonds, oranges, and grapes, are the chief fruits exported. The strawberry and cherry are sparingly grown, but good, what there are of them. The Spaniards are not very enterprising in introducing new varieties.

FOREIGN INTELLIGENCE.

FUCHSIA FULGENS.—II.—This fine old Fuchsia is not half so much grown as it ought to be. In these days of foliage decoration it ought to come into a good place, for the sake of its fine leaves. It is one of the easiest things to grow. There can be no better way of managing it than to plant out young well-rooted plants in a moist bed, enriched with a good deal of leaf-mould and well-rotted cow-dung. There let them grow and bloom as they like, and in a dry season give plenty of water: it can hardly have too much if the drainage is good. At the end of October take them up, cut them close over to the crown, and stow their roots in boxes with some poor sandy soil shook well amongst them, and kept just moist enough to prevent shrivelling. Put the box on the top of a flue as soon after Christmas as you like, and keep it there till the roots throw up new growths, from which take as many cuttings as you want, and strike with a pretty good bottom-heat. These will make fine pot-plants, which are to have good shifts as they require it, and a saucer to each for water after the middle of May. The roots from which the cuttings have been taken may be potted, and got hard by May to be planted out again. Clumps of four or five plants together in the front of a mixed border look fine. For all other purposes it may be grown the same as any other fuchsia.—*Gardener's Weekly.*

TREE CHRYSANTHEMUMS.—In rear of the specimen plants on the side shelves, Mr. Forsyth has a number of fine standard Pompons with stems about 3 feet high from the pot, and fine heads of bloom. The Pompons are well suited for this mode of training, and as grown and flowered by Mr. Forsyth, are very effective in the conservatory. Among the specimens trained in this manner were fine examples of Bob, crimson; White Trevenna, a remarkably free-blooming variety, and excellent for the purpose; Cedo Nulli and Lilac Cedo Nulli, of which the same may be said; Andromeda, Aurore Boreale, General Canrobert, Duruflet, and Lilac Gem. Several Anemone-flowered Pompons, are also grown in the same way. Among the newer Pompons, in addition to Little Gem, the most notable are Madge Wild-fire, red with golden tips; Little Creole, brownish orange; and St. Michael, golden yellow; and of older kinds Salamon, Mustapha, Florence, and Brown Cedo Nulli—*Cottage Gardener.*

EARLY PEACHES IN ENGLAND.—A correspondent of the *Cottage Gardener*, contributes the following notes:

As to Peaches, the earliest to ripen this year was Early Beatrice, which ripened on the 2nd of July. The plant I received from Mr. Rivers was very small, but ripened perfectly two fruit, which were of good flavor. Early Rivers did not bear any fruit, but I hope to prove both sorts fully next year. Early York was the next to ripen, on the 16th; this sort is always to be depended upon; the fruit is excellent, and it always bears a good crop. Early Grosse Mignonne has been very fine, one would therefore suppose that it requires a considerable amount of sun to ripen it well; this ripened on the 25th of July. Dr. Hogg came in on the 2nd of August, and promises well; Royal George came in on the 5th, Bellegarde on the 13th, Violette Hative on the 17th. At the same time ripened Golden Rareripe, beautiful in color, but worthless as regards flavor. Exquisite ripened on the 25th, a large yellow-fleshed variety of excellent flavor. It was closely succeeded by Prince of Wales, of which I have not yet formed a very favorable opinion. Princess of Wales and Walburton Admirable ripened on the 31st of August; both are excellent. The first two fruits of the last-named weighed together 19 ozs. After an interval of four weeks Salway ripens.

FRUITS FOR TABLE AND FOR MARKET.—They find in England the distinction is as important as here. A correspondent of the London *Journal of Horticulture*, says:

There is I may premise, a very great difference between growing fruit for market and growing fruit for a gentleman's table. The method of cultivation, and the end desired—good fruit, may be the same, yet the one is generally for quantity, while the other is for quality and variety. The best fruit in quality are seldom the most profitable for general market purposes. Usually the highest-flavored are the most delicate growers and less productive; and again, a certain variety may have all the good qualities, yet if it is not known in market it will not sell. A fruit to become a profitable market variety must be well known. A particular color, even, will frequently cause its rejection in Covent Garden. Tastes change, however, and a variety which may at one time be much disliked may afterwards become very popular. The masses of the people, however, the London mechanic and his wife, who are the great consumers of Covent Garden fruit, appreciate and care but very little whether a fruit is fully up to any horticultural standard of perfection or not, provided they have plenty for their money. Quantity is evidently more prized than quality, especially if the latter is attended with scarcity.

THE HAMPTON COURT VINE—Is another illustration of the "truths" of history. The Editor of the *Gardener's Chronicle* says:

The old Vine at Hampton Court is still alive, and looking well. It has been this season rather more vigorous that usual. We learn on good authority that there have been about 1200 bunches produced upon it during the past season, which nearly averaged a pound weight each. In some of the old guide-books it is stated that this Vine bears over 25,000 bunches in a year, which is true; but this is in reality from two crops, as the ripe fruit of the one season has been seldom cut until the month of January of the following; consequently, the Vine may have had 2,500 bunches on it in the course of twelve months. By this little bit of artfulness, the Vine has received a great deal of praise which is not due to it.

BEST CHRYSANTHEMUMS.—In a large nursery the London *Journal of Horticulture* noticed the following as the most conspicuous for their size, colors, and beauty—viz.: Prince of Wales and Virgin Queen, magnificent, the one purplish violet, the other pure white, and nearly 5 inches across; John Salter, Prince Alfred, Queen of Whites, with some splendid blooms; General Bainbridge, Crimson velvet, Cherub, Beverley, Golden Dr. Brock, Defiance, as a fine specimen; Lord Clyde, crimson; Lord Ranelagh, Rifleman, Sir G. Bowyer, Lady Hardinge, Hereward, Donald Beaton, Pandora, Prince Albert, Anaxo, Rev. J. Dix, Sam Weller, Jardin des Plantes, Antonelli, Countess of Granville, Raymond, St. Columba, golden amber; Yellow Perfection, Julie Lagravere, Oliver Cromwell, Mr. Wyness, and Golden Beverley.

HORTICULTURAL NOTICES.

AMERICAN POMOLOGICAL SOCIETY.

It having, upon consultation with some of the Fruit Committees, been deemed advisable to hold a special meeting of the officers and committeemen of the American Pomological Society, for the purpose of a careful revision of the Catalogue, the undersigned hereby give notice that such meeting will be held on the 10th day of February, 1869, 10 o'clock, A. M., at the rooms of the *American Agriculturist* (which have been generously tendered to the Society), in the City of New York.

It is hoped that every one will recognize the importance of our Fruit Catalogue, and also see the necessity of a special meeting for its revision, and be present thereat, to aid and assist, preparatory to the next session of the Society, to be held in Philadelphia, Sept. 15, 1869. Should it be impossible for any one to attend in person, he is urgently requested to write out his views and opinions, and forward the same to F. R. Elliott, care of Charles Downing, Newburgh, N. Y.

Contributions of fruits are also specially invited, in aid of the work to be performed. These may be directed to "American Pomological Society, care of Orange Judd & Co, Broadway New York."

MARSHALL P. WILDER,
President.

F. R. ELLIOTT,
Secretary.

CHICAGO HORTICULTURAL SOCIETY.

This institution recently held its third annual meeting, and seems prospering; although complaints are made that it does not receive the support of the Chicago horticulturists, which it has a right to expect. We hope the officers will feel better encouraged in this respect henceforth. The following is the list for this year:

President, Edgar Sanders; Vice-president, C. W. Ross; Recording Secretary, R. A. Meers; Corresponding Secretary, W. J. Ellenwood; Treasurer, Daniel Worthington; Librarian, H. Lumbard, Executive Committee, Andrew Miller, Geo. Lambden, A. Morrison, F. Sulzer, and J. C. Grant.

GRAND PRAIRIE HORTICULTURAL SOCIETY, ILLS.

This is a new institution. The inauguration will take place on the 10, 11, and 12th of Feb., and a grand time is expected. Some of the leading Horticulturists, Botanists, and Entomologists of the West will be present, and speak.

E. Daggy, Tascola, Ills., is President, and John D. Van Norman, Onarga, Ills., Secretary.

KANSAS HORTICULTURAL SOCIETY.

At the annual meeting, onthe 15th January, President Tanner said he believed in the supe-

riority of Kansas fruits, in point of beauty and quality, over those of the Middle States, and thinks that an exhibition of those fruits at the National Pomological Congress, would bring many of the best horticulturists to the State of Kansas.

The Secretary, G. C. Bracket, then read his report, wherein he states that, as a general thing, the horticulturists of the State had not responded to his enquiries.

The officers, for the ensuing year, are President, W. C. Tanner, Leavenworth; Vice President, C. B. Lines; Secretary, G. C. Bracket, of Lawrence; Treasurer, S. T. Kelsey, Ottawa.

The following are the varieties of apples recommended for general cultivation in Kansas: (We think the list a good one for Western Missouri.) *Summer*—Carolina Red June, Early Harvest, Sweet June. *Autumn*—Maiden's Blush, Fameuse, Fall Wine, Rambo, Belmont, Dyer, Bailey Sweet. *Winter*—Pennsylvania Red Streak, Winter Swaar, Ortley, White Winter Pearmain, Winesap, Romanite, Raule's, Janet, Rome Beauty, Ben Davis, New Missouri—also called Missouri Keeper. This latter tree is represented as hardy, and early bearer, and the fruit as every way desirable, and a great keeper.

The *Jonathan* was voted down because of its showing spots of dry rot. The Willow Twig was added to the list.

The report of Committee on Pears only developed the fact that there was a general and entire failure of the crop throughout the State in 1868. The following list was recommended on the quince, or as dwarfs: Doyenne d' Ete, Rostiezer, Tyson, Belle Lucrative, Louise Bonne de Jersey, Swan's Orange.

On the pear-root, as Standards, Bartlett, Flemish Beauty, Doyenne d' Ete and White Doyenne.

Of grapes only two varieties were recommended for general cultivation, viz.: Concord and Hartford Prolific. The amateur list embraces Iona, Delaware, Rogers' No. 1, Allen's Hybrid, Creveling, Diana, Israella, Rogers' No. 3. Wine List (general): Concord, Clinton. Amateur Wine List—Ives, Norton's Virginia, Catawba and Martha.

Of Peaches we make only one notice. Dr. Housely spoke of a peach raised in Kentucky, which he calls the *McCormick.*, very similar to the Indian Peach, of Illinois, a *cling*, which never fails to re-produce itself from the seed, and for which the Dr. claims all the excellencies of a late peach.—Condensed from *Rural World.*

IOWA HORTICULTURAL SOCIETY.

Pears have not, as a general thing, been a success, yet in a few localities and upon clay soils they have done well, and in some instances extraordinary well, but in the central and western portions of the State they have not proved remunerative to the planter.

Cherries, all except the Morello varieties, are a failure.

All the varieties of sweet Cherries grow too fast and consequently winter kill.

Nearly all the varieties of plum grow well; all are hardy, bear early and full crops, but the "little turk" destroys the fruit.

Peaches in the south east part of the State have been in some years highly productive and of course very remunerative, but throughout the State very unreliable.

All the varieties of currants prove to be a success in all parts of the State. So, too, with American varieties of gooseberries. English sorts are of no account.

Raspberries and blackberries, so far as tried, are better for winter protection.

Grapes seem to be a natural product of American soil, and Iowa will yet make a sensation in grape growing.

The Concord, "the noble Concord," is the grape for the 1,200,000 people of Iowa. It is extensively planted in all parts of the State. It is such a good grower and so prolific a bearer that the popular mind is almost satisfied.

The Delaware, well cared for, and the Clinton and Hartford Prolific also do well.

Wine making has not been much practiced in the State, except in a few places along the Mississippi.

The Rogers' Hybrids, Iona, Israella, Adirondac, and some other new and *high toned* sorts, have been tried in many localities, but have not, so far, proved profitable.

In the immediate vicinity of Des Moines there are perhaps not less than 100,000 vines in vineyard, and still more are being planted, and nineteen-twentieths are Concord.

Strawberries have not received such attention as they deserve. This seems to be sheer neglect, for wherever tried they have done well.

I have given no exaggerated accounts of fruit crops; but suffice it to say, that $900 per acre has been realized for a single crop of apples, and $1,500 for the crop of an acre of grapes.—From the address of *President Kauffman.*

The Gardener's Monthly.

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HINTS FOR MARCH.

FLOWER GARDEN AND PLEASURE GROUNDS.

With March, in the Middle States, comes the annual clearing up,—the final dressing over the grave of buried winter, and the planting of it with spring flowers and green things. The lawn is always the first consideration, for the "strip of green grass" is often the vivifying germ which warms the citizen's heart into active love for country life. Much as the lawn plays a part in English gardening, it is of much more account with us. Our heats render the grass particularly refreshing. Our droughts are somewhat against our great success,—but the charms of having it, makes every effort for its attainment desirable.

Our readers all know that the soil should be made as deep as possible, because a deep soil is generally a reservoir of moisture, from which is replaced the waste from the drying surface, under the summer heats, and thus the grass is kept from burning out. But this is not all. Lawns soon become impoverished by exhaustion of the soil, and by continual mowing,—and this has to be provided for. Mowing machines particularly injure lawns, by their very close and continuous cutting. But this must not be an argument against the machines. We cannot do without them. One should be on every lawn of any extent. But we must in some way provide a counter advantage to check the weakening influence which they undoubtedly exert. One of the troubles of close mowing is that the grass is so weakened in vitality, that little, low, vile weeds soon advance their forces, and choke out the grass. Allowing the grass to grow up without mowing for a year will give renewed vigor to the grass, and be death to the little pests; but in a year or two the old sod will be as bad ever, and it is doubtful whether the advantages of the plan compensates for the untidiness.

We think the best plan to do with these worn out lawns, is to top dress with rich burnt soil, as recommended last month by Mr. Sargent, and sow new grass seed with the top-dressing—in the South and Middle States using blue or green grass (*Poa pratensis*) and in the North perennial Rye grass (*Lolium perenne*). Even in this way we expect a lawn will not endure for ever; but when this fails, we would plow or dig up the whole thing, add some enriching matter, and seed down again at once. Lawns sown in spring soon get green, and require little more attention than to pull out the coarser weeds, and to have a rolling occasionally in dry weather.

Walks and roads are not used as much to add mere embellishment as in Europe. They are costly to make and to keep in order. In American gardening they are only employed where absolutely necessary, and then turned and twisted as little as may beautify, without losing sight of their necessary duties. Old tan bark makes a very cool and delightful walk under the shade of trees. It must be laid on a dry bottom, or it becomes very unpleasant in wet weather. Slag from furnaces, ground up with ashes is the very best material for garden walks, and the color is far more agreeable in hot weather than gravel. Notwithstanding its dark color, it is not so hot, as it does not pack quite so hard as the regular road material. Sand, on the other hand, though it does not pack at all, is very hot, on account of the very hard nature of its particles.

Along the sides of paths or walks, long narrow beds for flowers are appropriate. The English have what they call the Ribbon System, wherein they employ many kinds of colored leaves and flowers in long lines or masses, as in a ribbon. The same kinds of plants do not do well here as there; but when more tropical things are used they do pretty well. The Irisene,

the Coleus, and the Centaurea ragusina have been found very good, and some very pretty effects can be had from the variegated large Periwinkle.

Annuals are sown this month as soon as the soil gets dry and warm. We have in past years given the best common kinds,—there are a few newer ones announced this year, which we think may be found good additions. The Chinese Pinks,noticed in the reports of the Pennsylvania Horticultural Society last year, proved very good things to have. There is also said to be a Rose-colored Escholtzia out. Mimulus repens has purple flowers. Modiola geranoides, has purple flowers like our native Geranium maculatum. Palava flexuosa is spoken highly of. The Viola cornuta of past seasons proves a very good thing for our borders. Besides, there are older ones which are fully described in most respectable seed catalogues advertised in our columns by the seed firms. We can give our seed-sowing readers no better advice than to get one of these Annual seed lists. What are called the tender annuals, and which are usually designated in the seed lists, should not be sown before the weather gets very warm—about the middle of next month.

The following from our March hints of last year, will bear repeating here :

Planting trees will require particular attention now ; but do not be in a hurry the moment the frost is out of the ground. Cold winds are very hard on newly set out trees. Wait till they are gone. Always shorten in a little the shoots of all trees planted. They will grow the faster for it, and are more certain to live. Evergreens should be left to the last.

Shrubs are not near enough employed in planting small places. By a judicious selection, a place may be had in blooming state all the year ; and they, besides, give it a greater interest by their variety, than is obtained by the too frequent error of filling it up with but two or three forest trees of gigantic growth. Plant thickly at first, to give the place a finished appearance, and thin out as they grow older. Masses of shrubs have a fine effect on a small place. The centre of such masses should be filled with evergreen shrubs, to prevent a too naked appearance in the winter season.

Ornamental hedges, judiciously introduced in to a small place, add greatly to its interest. No easier method offers whereby to make two acres of garden out of one in the surveyor's draught. The Arborvitæ, Chinese and American ; Hemlock, Holly, Beech, Hornbeam, Pyrus japonica, Privet, and Buckthorn may be applied to this purpose.

Herbaceous plants do badly if several years in one place. Every second year, at this season, take up and divide them. Sow as soon as possible some hardy annuals. The earlier they are in the ground after the frost leaves it, the finer they bloom.

FRUIT GARDEN.

Whatever may be said of birds and their evils when the fruit is ripe, there can be but one opinion about their value *now*. They have nothing but insects to live on, and they eat them by the millions. Insects are a far greater scourge to the fruit grower than birds,—it will be wise to encourage them. We see the English sparrow is getting naturalized in various parts of the country. We expect to hear in time great complaints from its graminivorous propensities ; but this can be better guarded against than the attacks of insects.

It seems as if we are again to have plums and cherries, for the plum knot is readily kept down now that its true nature is understood. The curculio is now the only formidable enemy left, and he falls back before "eternal vigilance." Our markets were loaded with plums last year. Somebody grows them.

In planting fruit trees aim to have them so that the hot dry sun will not have full effect on the ground about the roots. The great heat in this way injures the trees. Many who have trees in gardens plant raspberries under them. The partial shade seems to be good for the raspberries, and helps the trees. Blackberries would no doubt do well in the same situation ; and strawberries it is well known do not do badly, grown in the same way.

It has been noted that the grape vine thrives amazingly when it gets into an asparagus bed. These are generally elevated, and are thus dry,—while the rich soil necessary for asparagus, is also good for grapes.

The gooseberry and currant also do well in partial shade. In fact if you would have the gooseberry and currant in great perfection, get a lot of old brush wood and cover the rows closely, so that the plants will have to push through and you will be astonished at the growth and

healthfulness of the bushes. The decaying wood also furnishes an excellent manure for them. The finest currants ever grown can be had by mulching with old chestnut burrs, or even saw dust.

In fruit growing remember that fruits are like grain and vegetable crops, in this,that they must have manure to keep up fertility. Unlike vegetables and grain, however, their feeding roots are mostly at the surface. It is best, therefore, annually to top-dress fruit trees. If manure cannot be had, any fresh earth from ditches or road sides, spread a half an inch or so under the trees, will have a wonderful effect. Indeed, we do not know but that for the pear tree a thin layer of road sand is one of the best of manures. We have seen apples thrive amazingly with a coating of coal ashes.

Whitewashing the stems of orchard trees has a very beneficial effect in clearing away old bark and destroying the eggs of innumerable insects. The white color is bad ; throw in a little soot or some other matter to make it brown. In greenhouses sulphur has been found of benefit in keeping down mildew. Possibly if mixed with the whitewash in tree dressing, it might do good against fire blight, and such like fungoid troubles.

VEGETABLE GARDEN.

Deep rich soil, now so generally condemned for fruit gardens, is of the first importance here. Soil cannot be too deep or too rich, if we would have good vegetables. It is indeed remarkable, that in many respects we have to go very differently to work to get good fruits, than we have to perfect vegetables. While, for instance, we have to get sunlight to give the best richness to our fruits, our vegetables are usually best when blanched or kept from the light. So also as we keep the roots as near the surface as we can in order to favor the woody tissue in trees, we like to let them go deep in vegetables because this favors succulence.

It is best not to sow tender vegetables to soon, they get checked, and the last will be first. Asparagus is one of the earliest crops to set out. It was at one time believed that the varieties of this would not come true from seed, and that there was but one best kind. We are not so sure of this now. Many plant them too deep and fail ; four inches is enough, rows 20 inches, and plants one foot apart will do. Make the soil particularly rich.

Beets also may now go in. Extra Early Bassano is found a good variety for this district. Henderson's Pine Apple we have heard well spoken of. The Swiss Chard is a kind of beet grown for its succulent, white leaf stalks, which are cooked like Asparagus.

To have Brocoli it has to be sown very early, or it will not head. The purple Cape, and white Walcheren are the most popular varieties. In Cabbages there have been many new varieties the few past years. It is hard to decide on the best. The Early Dwarf York is still largely planted for a first crop, and the Large Early York planted for a second coming in. The Early Wakefield is, however, very popular in some districts. The Winningstadt is approved as a summer sort, and its tender quality is appreciated. For late crops the Marblehead varieties have justly earned a good reputation, although the Large Late Drumhead, and Flat Dutch are still largely planted. The Savoy's and Red Dutch are also sown now. For protection against the Cabbage fly we find nothing so good as water slightly impregnated with coal oil, and syringed over the seed beds.

Early Horn Carrots may be sown now,—the Long Orange about the end of the month, for a winter crop.

Celery for the main crop will do about the end of the month, but a little may be sown now. We have never been able to make up our mind whether there is such a thing as an absolutely *solid* variety of celery ; or whether pithiness in any degree depends on soil or culture. Certainly we buy all the most approved "solids" every year, and never yet found one satisfactory throughout. We cannot say which is the best of the many candidates.

In Corn, we found last year, Olcott's a superior variety, but this had better not be sown before middle of April.

Cucumbers must also be kept back, but a few may be sown to come on early. Hot beds may be got ready for these, and for Egg plants, Peppers, Tomatoes, &c. A very little protection in this way brings things along beautifully.

Lettuce cannot be sown too early, or on too rich a soil. The early Tennis is good for a first crop.

Onions, Parsley and Parsnips all like early sowing.

As for Peas, the novelities are legion surely. We are unable to decide on the merits of the rivals. We are not sure that for earliness any thing is better than the usual "Extra Earlies" of our leading seedsmen. One thing is clear, wherever one can get Pea sticks easy, the kinds

that "need no sticking" are the least desirable. Radish and Spinage must also be early sown, and on rich ground.

In sowing seeds, keep them as near the surface as is consistent with moisture. Rotting from deep planting is often the cause of *bad seeds*.

GREENHOUSE PLANTS, &C.

Dahlias should now be brought forward. A good plan is to shorten the extremity of the roots, put them in six inch pots and place in a warm greenhouse. In a few weeks they will sprout, when they should be shaken out, divided with a piece of root to each sprout, and separately potted in four inch pots.

Camellias will require rather more water while growing than at other times. Just before they grow is a good season to graft. Cut down the stock, cleft graft in the crown, wax and plunge in a bottom heat of 70°. A great many kinds may be had on one plant by the bottle system, practised by the writer's father, thirty years ago. A shoot about to grow is obtained and attached to the stock as in inarching, the end of the shoot being put in a small phial of water suspended beneath it. This plan does best, however, with the young wood in July.

Azaleas succeed well by grafting with the half-ripe shoots of the present season's growth on plants raised either by seeds or cuttings. Old wood does not take readily.

Chrysanthemums should now be raised from cuttings for fall flowering. They make better blooming plants than off-sets.

Fuchsias may now be readily struck from the young growth from the old plants, which will make excellent blooming plants for the next summer season.

Geraniums, Pelargoniums, Cinerarias, and Chinese Primroses must be kept as near the glass and light as possible; they do little good in shady places. Keep off the green Aphis—for this on a small scale there is nothing like hot water; on a large scale, tobacco-smoke in several successive light doses is still the best remedy.

Auriculas, Carnations, Pinks and Polyanthus—the prettiest of florist's flowers—must be kept cool, just free from frost, with plenty of air, if the best results are desired.

New Holland and Cape plants, such as Epacris, Acacia, Heaths, etc., are now the glory of the greenhouse; hot bursts of sun on them should be avoided, as it lays in them the seeds of "consumption," which frequently carries them off the following summer.

Look out for a good stock of bedding plants in time; by striking cuttings of such things as grow rapidly and speedily, and sowing seeds of such annuals as may be advanced to advantage.

Pansies are coming now into flower. They like an airy frame, where they will not be roasted at midday nor exposed to drying winds, and yet have a free circulation of air and plenty of light. Planted out in such a frame, and the old shoots cut away as soon as the plant has done flowering, the plants will keep healthy over till the next season.

Superior varieties can be raised from seed. Choose those with the roundest petals, best colors, and the first flowers that open, to raise seed from.

COMMUNICATIONS.

FOREIGN REMINISENCES.

No. 7.

ITALIAN GARDENS.

BY H. W. SARGENT, WODENETHE, N. Y.

I am not sure but what there are more Italian Gardens in England than in Italy itself.

There is hardly a place large or small of any sort of pretensions, but what has this new feature among its adornments; and in fact the present fashion of ribbon gardening seems peculiarly adapted to the long stately terraces and formal figures—parterres of embroidery set in stone and surmounted by balustrades and vases, as in the annexed view of Wilton House. An English place, as a general rule, consists first of its Park, the outer portion of which is often a rough forest or chase filled with game, abounding in cover. One passes from this into the Home or Deer Park where the picturesque beauty and wildness of the chase give place to stately groups

and masses of trees—grand vistas and glades of soft verdant turf kept short and fresh by herds of cattle and deer, and flocks of sheep feeding up to the very entrance gate.

Of course there are not on this side of the house any flowers or shrubs or ornamental plants; everything is quiet and simple, and, in places of size, grand and stately. Should the house face the east, on the north side is usually a dense mass of Evergreen plantation, concealing the offices, stables, and stable yard, (this last an important feature in England) and separated from the Park which surrounds it by a Ha Ha, a brick wall, or a wire fence.

On the south and west sides extend the Italian Gardens, if possible in terraces, the west garden being 2 or 3 feet higher or lower than the south, the whole surrounded by a low brick or stone wall surmounted by a heavy stone balustrade, with vases on the pilasters every fifteen or twenty feet, filled with splendid specimen Geraniums, or Yuccas and other formal plants.



WILTON HOUSE.

Around the outer portion of the garden runs a walk, 10 to 20 feet wide. Adjoining the balustrade, and immediately bordering it are long-formal beds, densely planted in ribbons. Centaurea candidissima, Mrs. Pollock Geranium, Silver Queen Geranium, Tom Thumb Geranium, and Lobelia Paxtonii, the Lobelia and Centaurea coming together form a beautiful contrast, the edging of these beds being white marble or stone, six inches high and as wide. From this outer grade or platform, you descend perhaps three or four stone steps to the centre garden, which is sunken to this extent, and this is entirely filled by charmingly arranged patterns or figures of architectural designs; sometimes in scrolls or arabesque forms in stone or marble edgings, precisely as we employ box in this country,—the beds themselves forming a species of embroidery from each representing one color.

The broad straight walks are likewise bordered at intervals by tubs or square boxes containing Irish Yews or Junipers, and Portugal Laurels cut into round headed balls. The whole of these gardens abound in fountains, statues, vases, and china seats; and being all in immediate connection with the house, from being on the same level

as the floor of the living rooms, with which they communicate by French windows opening to the ground, the effect is most captivating.

In fact the English Italian Garden is an outside drawing room thoroughly isolated from the Park—generally four or five feet above it—accessible only from the different rooms of the house, except through a gate from the Park, which is always kept locked. It is reserved entirely for the family and their friends; and being always in evidence, is kept in scrupulously nice order.

While there is something dreary and unsafe in windows opening upon a lawn exposed to cattle or intrusive strangers as we have them in this country, you entirely lose the feeling in England, from, as I have said, the gardens being raised several feet above the rest of the place; and in addition having a wall and balustrade with perhaps a Ha Ha beyond so as to render the garden inaccessible to outsiders.

From the Italian Garden you descend by a flight of steps, through a locked gate to the pleasure grounds, Arboretum, Pinetum, Rosarium, Kitchen Garden, &c., all separated from the Park by the brick wall or inaccessible Ha Ha.

PURSH'S JOURNAL.

(*Continued.*)

July 3.—From Owego I had but 17 m. to Tyoga point--Hieracium venosum, Cistus canadensis Cornus fastigiata?-the Asclepias quadrifolia-this plant dit grow in the late cleared grounds higher here, than I seen it any where else.-I found several specimens branching out in a number of umbellas, that it appeared to be quit a different plant.—While I was walking along the river this morning a black squirrel crossed the river, which I anxious to know what it were dit kill. It seemed strange to me for a squirrel to take the water. Œnothera fruticosa & parviflora in flower. A little after noon I arrived at Tyoga, & but up at Mr. Tuttles, where I had directed my trunk to be sent to; it had not arrived. On my calling on the post office I found a letter from Dr. B. S. B. with instructions to proceed on to Onondaga.

July 4.—I took an excursion from the house to the point, its meadows & banks of the river.—Along the river I found similar petrefactions in the loose rolling stones similar to those at Wilkesbarre; some specimens I laid aside if I should find opportunity to sent a collection from here; they were some beautifull large shells, remarkably well preserved. Several large stones were run over with a calcareous shell or cover on which smaller peples had attached themselves, in a manner of rough cast.—Anemone dichotoma—Galium mullugo? Smyrnium integerrimum—Euphorbia corollata--Thalictrum nigricans which has a very heavy smell—Lobelia Claytoniana & Heracleum lanatum were in flower.—I seen a species of Hypericum along the river which I supposed to be the H. aseyroides.—in the same places Pulmonaria Virginica Acer glaucum-a species of Chestnut Oak & large bushes of Crataegus coccinea.—Altogether I dit not find this place as far as I had seen answering my expectations & concluded not to delay any time in or about it, but to proceed on to more interesting scenes.

July 5.—This day I devoted to writing & drying plants:—small excursion: nothing new.

6—Left Tyoga, up Cayuta Creek—Apocynum andrasaemifol: (.b.) very plenty in the cleared lands; in the Oak Woods I observed the Lily, often seen before, but I cannot recollect which species it is; it is Lilium foliis sparsis verticillatisque: caule unifloro; floribus erectis: corollis campanulatis, semipatentibus; petalis unguiculatis.—

The valley, formed by Cayuta Creek is in soil & vegetation similar to the beech woods—Oxalis ascetosella, but not plenty—Dracæna borealis--Helleborus viridis—Orchis fimbriata in full bloom—Dalibarda violoides in fruit.—The woods abount with Sugar Maple; The valley is in some places very narrow & the creek very winding which obliged me to wate it several times to keep the road—I heartyly expected to reach the house this night, which had been recommended to me, to stay at, but I dit come to it before it got dark.—I observed in a small run a species of Sium as I suppose, without flowers whose leaves under the water were very fine divided, & the upper ones only pinnate; I call it S. heterophyllum. From a small tavern, which is kept here, it is about 22. miles to the head of Cayuga, which I intend to reach to morrow.—

7. Having opportunity of going in company of a wagon, who would carry my things, I set out early this morning. The road leads through a very romantick valley, the mountains sometimes very high. After following the course of Cayuta cr: for 9. miles, we turned oft to the right. The vegetation similar to what I mentioned yesterday, 8. miles this side of Cayuga city or as it is called sometimes Ithaca we crossed probably settled by Indians, but it is now grown

a place very beautifully situated calld Sapony Hollow: this place has been once cleared & up with small white pine very handsomely mixed with Populus tremuloides & Magnolia acuminata. The last is very scarce about here & the trees here in this place & two or three others I seen are of a creeply, small & old growth, nothing like to what they are in Virginia. At this place we refreshed ourselves and feed the horses, as far as this I had this days travel very agreeable, as on account of the roughness of the road & the deep mire holes in some places the wagon could not go on as fast as I could walk, having plenty of time to look about myself: besides being unincumbered with any baggage. But the road getting now good & evening drawing nigh, I had to get into the wagon & we travelled tolerably fast.—About 3 or 4 miles from Sapony Hollow the timber changes into Oak & from there to Ithaca it is all Oak timber mixed with pine, with the rest of plants similar to Tyoga point. We arrived at Ithaca at night fall.

8.—Being now on the heath of Cayuga I remembered your information about Erica caerulea growing on the high lands between Cayuga & Seneca lake; I was very anxious of seeing this plant in its native place, but having not received the particular directions for finding the place, as I had been promised of, besides that, being rather afraid of running myself out of money necessary to come to Onondaga, as my pocket was low & the distance considerable, I had to my own mortification, to give up all Ideas of a search for it. The morning was rather suspicious for rain, as it had rained some all night, I was detained at Ithaca until 11 o'clock, when I set out for the lake, which is only 2 miles distance. My route was going on the east side of it. After having crossed Cayuga creek, with a great deal of difficulty, to perform it, & coming on the rising grounds, on the other side, I heard a very strong noise of falling water: I followed the sound & came to one of the most romantick & beautifull falls of this Creek, I ever had seen; the access even only to a sight of it is very difficult; but regretted very much, that I had not had the least information about these falls at the town, as I should have made it my business, to visit them unincumbered with my baggage though I might have spent the day by it. The ledge of rocks confined in a very narrow cove, & surrounded by high hills: imposible to ascend, with a load on my back on account of the steepness; over which this considerable stream drows itself down, is a very interesting scene, & I doubt not if time & opportunity had allowed me to make an examination of it, I might have been paid for the trouble with something or other interesting or new in my line; but to go back to the town, I thought to be to much; so I had to go on & be satisfied with having had only a peep at it. I got in my road again, where I observed along the banks of the creek plants of Pentstemon pubescens. About a mile further I came to the banks of the lake. The shore which I came to was clear & gravelly with some common weeds growing near it as Thistles, Mulliens, &c. I followed the shore of it, for several miles, being in my route. It is generally covered with oak, maple & hickory. Buphthalmum helianthoides is the first yellow syngenesia plant I seen this year, Taraxacum excepted. A small Rosa similar to the one which I called last year R. monticola is very plenty here, & spreads a most agreeable fragrancy through the air. A species of Crataegus, -Ludwigia nitida-Ceanothus americanus-Lilium canadense—Apocynum androsaemifolium with a tall Molugo?—Orchis fimbriata—Cornus with white berries, Erigeron corymbosum! P.—Typha angustifolia-Smyrnium cordatum—Mimulus alatus—Galium hispidum, Veronica scutellata & some more common plants, I observed in the meadows leading to the lake. I travelled as far as the town of Milton, where I stood over night. The road, as soon as I had left the banks of the lake began to be quit interesting, as the fences on both sides & cultivated fields, with continued plantations, & farms occasion the road only to be covered with common weeds, amongst which the Verbascum thapsus. Anthemis cotula, & Polygonum hydropiper have the upper hand.—In one of the woods on this road I collected specimens of Niphrodium filix mas?—

9. I set out early this morning to make as much way as possible through this for my purpose to much settled country: Carpinus americana & Ostrya, which last I calld C. hispida on account of the cover of the young branches, with stiff hairs, are common in the woods: the timber very frequent beach & Betula lanulosa, mixed now & then with Oak—Morus rubra frequent. On one or two farms I observed the mulberry cultivated in orchards maybe for the raising of silk worms, as the trees were low & planted in regular close rows.—Cicuta maculata I found on the road side in several places.—Nothing in flower.—Lodged about 8. m. this side of Hardenbergs corner or the outlet of Owasco lake.

10. About 10. o clock I arrived at Hardenbergs corner or the outlet of Owasco: the day got exceeding hot, more so than I had experienced this season; I stayed to rest myself, feeling exceeding fatigued, about 11, a stage from Canandagua came in & as I found the road but very little interesting, being all a continued range of cultivated land, I concluded to take a seat in the stage, which would bring me to Onondaga this night yet, which I would not have been able to accomplish untill tomorrow night, the distance being 22 or 23. miles. Here I observed the first plants of the Myosotis lappula, for this season; growing along the road side in great plenty, as a common weed. At Skeneateles lake we took dinner. This is a most charming situation. At evening we arrived at Onondaga hollow, having had two hours rain before we came there. Here I took up my lodging with John Adams. The post office being nearly opposite of this, I enquired for letters but to my great disappointment found none.

11. This day I rested & made some necessary arrangements about specimens which I had collected, either dry or in their green state—inquired for the places of Capt Webster & Squire Geddes.

July 12 Very anxious of seeing the Salt springs which are only 5. m. from this place to the north, I took a walk to them; but being Sunday & knowing that I would have further opportunity of collecting specimens. I dit not provide myself with the tin box to collect any to day. The road goes chiefly through Oak woods, and crosses a considerable piece of swamp, through which Onondago creek runs close to the road side. I observed plenty of Zanthoxylum fraxinifol. on its banks—several sorts of Carex & Scirpus—Samolus Valerandi, Asclepias tuberosa — Turritis falcata, Opocynum androsæmifol—&c.

When I came to the springs, the place is called Salt Point I found them to be situated in a low piece of swamp which is clear for a great part of all timber; The works for boiling being erected along the edge of this swamp. on a high bank. & the water conveyed to them in pipes from a pump work, which is erected near one of the principal springs: some of the works are supplied by other smaller springs, the water being pumped by hand.

They boil the salt in potash kettles holding from 60 to 100. gallons; 6 or 8. kettles from what they call a block which has two fires to it; each kettle produces from a bushel to a bushel and a half of salt each boiling—The water is by far superior to any water I have tasted where salt is manufactured. Near the springs themselves the Salicornia herbacea, is the only plant which grows, but further oft in the mash a variety of various plants I am in expecting to find, but as I had only shoes on to day & intended to be back to my lodging I deferred the examination of the mash to another day.

To be Continued.

GRAPES & WINE IN WEST VIRGINIA.

BY B., WHEELING, VIRGINIA.

In the vicinity of Wheeling, West Virginia, there are in cultivation over one thousand acres of thrifty vineyards—mostly located upon the warm, southerly-exposed soft or shale limestone hillsides near the Ohio river. Among the vineyards are a few of over twenty years' bearing which have not missed yielding a good crop in all that time. Of course, on this soil the Catawba is all that that excellent grape can be under the most favorable circumstances; and the Ives', Concord, Creveling, Norton's Virginia, Isabella, and, indeed, almost every variety yet tried flourish admirably. At a meeting of the Eastern Ohio and West Virginia Horticultural Society, on the 26th of December, very excellent specimens of wine from the Delaware, Creveling, Ives' Seedling, Concord, Isabella, Catawba, and other varieties were presented from more than a dozen different cellars, and of the vintages of 1866, '67 and '68. Mr. Thomas Hombrook, an energetic Horticulturist, was elected President of the Society for the year 1869, and Lewis Baker, the enthusiastic small-fruit cultivator of the Elm Ford Fruit Farm, Secretary. This Society is entering the new year full of vigor and hope. It has a hard field of labor, but its leading members are confident that some good can be brought out of even this "Nazareth."

NEARLY FIFTY YEARS' EXPERIENCE IN FRUIT GROWING.

BY JAS. A. NELSON, MERCER, PA.

Having given a great deal of attention to the improving, culture, and growing of fruits; my experience, in a great many cases, has fully convinced me that the ideas and directions, as formerly held by most authors, for preparing the ground, planting, after culture, &c., have been a great hindrance in general to the fruit interest. I well remember the time, and even yet it is considered, to go into the fruit or grape growing business, a man must be very rich, the expenditures and labor being so great that any common or poor man need not undertake it. The fact is, the greater part of all the losses that have occurred to fruit growers, have been lost either by over kindness, enriching the soil too much, or by neglect to cultivate, and want of care. Some twelve years ago, I bought $50 worth of the different varieties of the best grapes known at the time. I prepared the ground as recommended by digging out holes some two and a half feet deep, and some four feet in diameter, filling them up again with stone, brick and all the rubbish I could collect, covered over with soil from the woods, then planted my vines, and during nine years I never got a bushel of good grapes. Three years ago, what vines were growing I removed to another place; but it happened in the first planting, getting tired of the labor, we planted three of the vines—an Isabella, a Catawba and a Diana, without preparing the ground, any more than making the hole shallow, and large enough to receive all the roots. The Diana was planted on very poor ground, and such bunches of Dianas I have seldom met with. The Isabella was planted on rich ground, and it appears to grow too much to wood. Some eight years ago I bought three dozen of one year old single eye, Delaware grape vines; set them out in ground well prepared with a compost strong with well-rotted manure. The season being a very dry one, in the fall, I found but three plants remained alive. Of all kinds of fruit trees, I think the Apple will withstand the most forcing with rich manures, and be satisfied with good cultivation. About the Pear Blight, that has been so much talked of lately, I have a great many bearing trees, and for the last twelve years have grown a great many thousand in the nursery, and never had any blight except on one tree that was grown on very rich ground. As soon as I discovered the blight, I cut down, and top grafted with the Seckel Pear, removed the surface soil away from around the tree, and filled up again with rather poor light soil. The tree has done finely since. I know a gentleman that has lost a fine lot of old Pear trees, within the last two years, by too liberally manuring them. Some fruit growers recommend root pruning, others say deep planting, getting the roots down into the poor soil. Both of the above plans mean nearly the same thing. The idea is to check the growth of the tree—why not plant at first in lighter ground? Or, if strong and rich, remove the soil for some distance around the tree, and fill up again with poorer soil. I find that good cultivation to nearly all kinds of fruit trees, vines, &c., is far better, and healthier, than any kind of very strong manure, applying it only at intervals in not too large quantity, as the soil appears to exhaust from cultivation, or by being taken up by the roots of the trees, &c.

CHINESE YAM.

BY W. R. PRINCE, FLUSHING, N. Y.

At this time, when a great excitement is being awakened as to the culture of this important Esculent, it would seem proper to make some explanations, by way of advice, to those who have not hitherto possessed any opportunities to awaken them to its merits. An Esculent possessing such inestimable claims to every point of superiority over the Potato, that it is most surely destined to supersede and banish that Tropical, diseased, and unreliable root from all our Northern and Western States, and from the entire British American Dominion, can no longer allow that its merits should be ignored by any class of our citizens. I shall, however, be compelled by your limit of space to a very short summary on this occasion. This most hardy of all Esculents is a native of Northern China and Tartary, and will sustain the rigor of the severest northern climes in the open ground. In its native region there are more than fifty varieties, regularly cultivated, comprising every form, round, short ovate, oval and oblong, with flesh snow white, pale and deeper yellow, and pink tinged, and all these are described fully in the Agricultural Works of the Chinese writers; and the immense importance attached to the culture of this plant, may be in some degree estimated by the fact, that more pages in their great Agricultural Publications are devoted to this Esculent than to any other object whatever. And when we realize the astounding fact, that more than three hundred millions of people of the most populous nation of the earth, subsist on this root, without the use of meat; and that for countless ages they have been thus sustained free from all famine, at the rate of a half cent cost per day, whilst other nations far—very far inferior in territorial population, have been ravaged by famine, and misery; the mind becomes astounded by the conviction, that God and Nature consummated this benign provision for these teeming millions, by placing within their clime, the most estimable vegetable

boon as food which has ever been bestowed on man. I will confine myself here to the enumeration of some of its prominent claims to an universal adoption.

First. Its hardihood, being suited to the most northern climes.

Second. Its culture, so very simple and easy in all soils, and more especially its adaptation to such soils as are usually deemed valueless for other Agricultural purposes.

Third. Its productiveness and cheapness; the crop in proportion to its actual value and importance, being the most cheaply produced of all food.

Fourth. Its Nutritious and Farinaceous qualities; filling the positions of both Meat and of Wheat; with its distinctive character over all other Vegetables, by its combination of Nitrogen, the same nutriment as exists in meat, which thus becomes united with properties the same as are found in Flour and in Corn Starch.

Fifth. Its unexceptionable excellence of flavor.

Sixth. Its freedom from all rot, and keeping perfectly sound and excellent for above a year, as tested by myself.

Seventh. It is a purifying constitutional food.

At present I have the round, and several oval varieties under culture, as well as the oblong varieties.

[Cultivators will probably agree with most that Mr. Prince says except about its *cheapness.* We attempted to dig out a few one day, and concluded we would rather live like an Indian by what game we could hunt and take our chances of starvation, than live in plenty on Yams, like a Chinaman. Perhaps friend Prince will let us know whether *he* ever dug any, and how many bushels he turned out in an hour ?—Ed.]

GRAPE VINE TENDRILS.

BY JAMES CHARLTON, ROCHESTER, N. Y.

I quite agree with De Candolle in assigning the leaves of plants to be "but a modified, or changed form of branch;" and likewise am quite willing to agree with Mons. Lestiboudois that the tendrils of the grape vine(I have not experimented with the tendrils of any other class of plants) are nothing more than homogeneous branches, not leaves, skeleton leaves, as you were pleased to designate them in the January number of the *Monthly.* The reason I claim such to be the case is this :—I have repeatedly taken the leaf of the Grape Vine, and after detaching its petiole from the stem have rooted it (the leaves) with the same degree of certainty as the cuttings of the branches are rooted; although I must confess that they are longer in rooting, (and much longer in throwing up a bud from the collar of the leaf,)than the ordinary cuttings are; but they will eventually throw up a bud, and ultimately make as good a plant, as the plant grown from a single bud. After being so successful with the leaves I thought that I would take the tendrils in hand, and try and see what I could make out of these. I accordingly (the past season) put in several pots of tendrils of the Rogers No. 4 variety, and after a long time was highly gratified to find that the majority of them had emitted roots, and after being potted off singly, several of them actually made leaves, and filled the pots with fleshy, healthy roots, but did not show any buds, before the cold weather set in and stopped their growing. I am sorry to state, however, that I have lost these plants that I had intended to have grown on next season. (It will be noticed that I have called these rooted tendrils, plants; I call cuttings of anything young plants, as soon as they have made roots). Having set my help to clean out the house they were in, and my man not being cognizant of these same plants, threw them away with the refuse; and it was about two weeks afterwards before I became aware of my loss, and the most diligent search failed in finding them. I will, however, endeavor to root more this coming season, and forward the same to you, Mr. Editor, for your inspection. If any other experimentor has been successful in this matter, I wish that he would give his experience to the readers of the *Monthly*, and oblige me, as well as others of your readers.

THE PLEASURES AND BENEFITS OF THE CULTURE OF EXOTIC PLANTS FOR GLASSHOUSES IN WINTER.

BY WALTER ELDER.

Read before the Pennsylvania Horticultural Society, February 2, 1869.

This is one of the most fascinating branches of ornamental gardening, in which the most fastidious lovers of plants can please their fancies, either in city or country, where sunshine enough can be had to benefit the plants. A very numerous variety of genera and species may be grown in a small space; some have foliage with variegations of colors most beautiful; others with blossoms in great splendor. Some emit fragrance from leaves and flowers most delightful; others have habits interestingly curious. A few move like animals when touched.

Glass-houses with flowers, in gardening, are as diamonds in jewelry, they bespeak wealth, liberality and refinement in the owners; they are home amusements, making summer all through the winter, and that without storms.

Teach youths the rudiments of Botany, and give them a treatise on the subject to study, and the open gardens in summer, and glass-houses in winter, will be to them sources of healthful recreations, where they can learn a new lesson from fresh flowers daily, and thus enjoy a continual intellectual feast; as from illustrated books with a new picture on every leaf, which will tame down the roving propensities of sons and win them from follies and vices; ward off longings and cravings in daughters; entice wives to stay at home, and save them from becoming wandering spendthrifts; heal the sick, and cheer the infirm and aged. Home is made sweet home where cordiality and affectionate love prevail.

Philosophers and physicians tell us that amusements are essential for the promotion of human health; and home attractions are the most rational, the safest, and the best.

The study of the physiology of plants makes us love to grow them, and excites a reverential awe for the all generous Creator, who commanded the earth to "bring forth the *grass*, the *herb* and the *fruit tree*," to feed and to cheer the the life of man; and he who was "according to God's own heart," so much enamored at their beauties and virtues, gratefully exclaimed, "Oh praise the Lord for his goodness, and for his wonderful works to the children of men."

Artists who never grew living plants, so much admire them that they ornament their various works with leaves, flowers and whole plants. Painters, printers, and Dyers, give colors to their wares in imitation of those of foliage and blossoms, and are the more costly, as well as more beautiful for such ornamentations. Perfumers, too, extract all the sweet scents from plants. When we consider the large sums of monies spent by wealthy families for such imitations and extracts, we are surprised that they neglect the culture of living plants, from which they can have all the beauties and sweet perfumes in reality, freshly supplied to them every day throughout the year at small cost.

We often wonder at the short-sightedness of the heads of wealthy families, in not having tender exotics in culture in glass-houses in winter, under the false supposition that they are costly; and yet, when we count the cost of other amusements with their usual accompaniments, which wealthy families indulge in; the short time they last, and the stings often left by emulations, disappointments and ingratitude, we find this the least disappointing, longest lasting, the most edifying, the cheapest and the best of all.

The cost of erecting glass-houses and filling them with choice plants is quite a sum at the beginning, but the cost is small afterwards, compared to the pleasure afforded; yet the first cost is a "lion in the way" to weak minds,—but those of strong and liberal hearts and clear sights, go right into it, and live in pleasing enjoyment thereof.

A moderate priced collection will afford blooms and fragrance from October to June. Many of variegated foliage are always pretty, and those of curious habits always interesting. Some are in bloom many months, others have fragrant foliage all the time. Here is a small list of annual bloomers which follow each other in succession, and vary the scene as time passes on:

Say two dozen Chinese and Japan Chrysanthemums for show, with a few pots of Mignonette and Tuberose for sweet smell,—they will last till Christmas, when Stevias and Epiphyllum truncatum and violaceum will succeed them; next comes Euphorbia of sorts; and Camellia, for show; and Daphne odorata for its delightful fragrance. Chinese Azaleas, Begonias and Bouvardias next come with blossoms in great profusion; and Olea fragrans gives sweet scent; then follow Acacias, Kennedyias, Coronilla; and Correa for show; with Jasmines and Myrtles for fragrance. Orange and Lemon trees come next with blossoms both beautiful and odoriferous. Rhododendrons and Fuchsias follow with flowers in splendor, and are enlivened with the sweet perfumes of Gardenias.

The above are accompanied by the following herbaceous tribes: Cinerarias, Calceolarias, Mimulus, Pelargoniums, Bletias, Callas, many of the Cactus tribe, ect., for show; and Heliotropiums, Wallflowers, Gillyflowers, ect., for fragrance. The following are dwarfs: English and Chinese Primroses, Daisies, Polyanthus and Auriculas with blooms; and Sweet Violets and Musk plant with sweet odors. The following

are bulbous plants: Cyclamens, Oxalis and Sparaxis bloom early, and Amaryllises, Achimenes and Gloxinias are later. Hyacinthsand double white Narcissus may accompany them all with their delightful perfumes. Climbers are also in bloom all winter. Passifloras, Bignonias and many others clothe the rafters with flowers. *Orchidea*, or air plants, are always curious to look at, and some are always in bloom; and the class with variegated leaves are always beautiful. The Sensitive plant and Dioneæ muscipula move when touched as if they had animation. The Pitcher plant and water-holding Pine absorb moisture from the atmosphere, and hold the waters in their cells even when other species droop with dryness; in short, the pleasure of glass-house culture has no end while life lasts.

We now come to the benefit of this health giving pleasure.

The furnishing of cut flowers for families for the various purposes which floral decorations are now used, may save an expense greater than would be needed for repairs and material to keep the culture and houses in good order, besides the pride and pleasure of being ones own productions, and the high honor of giving to neighbors in case of marriages, births and deaths. If the glass-houses are in the country, and families live in cities, the pleasure of riding out to see them during the dormant season, is good for the health.

Seeds and cuttings of new plants can be propagated into well rooted plants in glass-houses, and set out when the weather gets warm enough, and all the bedding plants for the summer parterres are multiplied and ready to set out for summer decorations when the proper season comes round; and many tender summer blooming plants in large pots and tubs may be safely kept under the stages, such as Plumbago capenesis, Lagerstræmias, Neriums, Pomegranates,&c. Dahlia roots, tender bulbs, &c., are also safely preserved in the glass-houses during the winter. All that may be a saving of more money than the cost of the gardener's wages for the winter months, besides, he being upon the place, does much needful work in making pea-stakes, bean-poles, labels, tieing up sticks, &c.; pruning, manuring, &c.; all of which may save the necessity of hiring an extra hand two months in the spring. The gardener, too, is equal with farmers who take shelter from storms in barns and stables; he takes shelter in the glass-house and does much useful work therein.

To make good gardeners, give them employment all the year, and something to stimulate a love and care of their professions, and we will soon have as skillful and honorable gardeners throughout our nation, as their brother craft are in other lands.

In *Greenhouses* and *Hothouses*, as we commonly call them, the plants are all grown in pots, and set upon stages and shelves near to the glass for light—and a great variety is there grown in a small space.

Conservatories are built higher and made more ornamental, to grow larger specimens of plants, where they are to be grown in large tubs; the floors are paved, and the plants so arranged that all will enjoy the sunshine, and to give a pleasing effect when passing along the gangways. If the plants are to be grown in beds and borders, without tubs or pots, the house is made all glass, except the frame-work, from a foot above ground, the foundation walls are of strong mason work, of stone or brick, and are arched or pigeon-holed; under ground borders are dug two feet deep both inside and outside of the walls, and are filled up with well prepared compost, made up of such materials as are best suited to nourish the kinds of plants to be set in them. The outside borders may be of such breadth as are wanted to grow bedding plants for summer bloom. The inside borders are made two feet broad, and next to them is a space thirty inches wide and dug thirty inches deep, and there the smoke-flue or hot water pipes are placed; the sides are walled with brick as high as the surface of the border, and on top a frame of open wood-work is laid for a gangway, and the heat from flue or pipes freely ascends and heats the whole house; the middle space inside of this is differently ornamented, the soil is dug out three feet deep, and compost is filled in, then large growing plants are set in it, the taller in the centre and the more dwarf around them—but, in a way that all will attain their full size without over-shading each other too much. They all grow very rapidly, and bloom in great splendor; the borders are planted with a mixed variety to give a good show and pleasant perfume all through the winter. Climbing vines of constant and pretty blooms are set at the posts of the frame-work, and climb up wires made for them, and clothe both posts and rafters with foliage and blossoms all throughout the winter; their roots run through the arches or pigeon-holes in the walls under ground, and feed in the outside borders as

well as the inside borders. Hanging baskets full of growing plants are hung upon the frame-work at such points as will give a pleasing appearance to the whole. Fancy cages with birds of sweet song are also hung up at proper points, and they fill the house with their music.

Let us now suppose that the centre of the middle bed is planted with Camellias, and Chinese Azaleas set between them and the edge, with a few Daphnes and Pittosporums for sweet scent; there we have an evergreen grove such as we may find upon the borders of China and Japan, and to give us blossoms and sweet odors for four months during winter and early spring. Or suppose the bed is set with Orange and Lemon trees, to ripen their golden fruit all the year through, and blossoms for three months both beautiful and fragrant. The above will al thrive in a temperature of from fifty to sixty degrees of heat, and the borders in such temperature may be set with Hyacinths, Wallflowers, Gillyflower, Mignonette, Sweet Alyssum, &c., for sweet smell; and many showy flowering species for show. For a higher temperature set Coryphias in centre, with other species of lesser growth around them; Olea fragrance and Gardenias will furnish fragrance in abundance; and in the border in this temperature set Heliotropums, Sweet Violets, Musk plant, and many of those mentioned for lower heat, will all perfume the atmosphere of the house. There are many showy blooming plants to be set among the sweet scented species, so as to feast the sight and scent equally well.

Or suppose a rock work be made on middle bed, and built with various kinds of pretty stones and shells, and filled up inside with rich compost, and planted with such species as will thrive upon it. We may name the winter blooming Epiphyllums and Euphorbias with many of the summer blooming Cactus tribe, Hoya cornosa, Sedums, Saxafragas, Sempervivums, dwarf Aloes, &c, with Ferns and Lycopodiums around the base. A basin or *case* may be framed on top, in which set the Poinsettia pulcherrima, with its leaves of dazzling scarlet, for fine show during winter; and when its beauty is over, remove it and set some other show species in its place; and continue removing and resetting when required, so as to keep up a highly ornamental head all the year round.

By another mode, an ornamental fountain with fancy jets may be erected—the waters may be thrown up to fall down in spray—the gold and silver fishes may swim in the water, and the *Victoria Regia*, and other pretty blooming aquatic plants may be grown in the fountain; and the borders can be set with such plants as prosper i a moist atmosphere, so there would be beauty, sweet scent and amusement.

It was by the skillful ingenuity of Mr. Ellis then Mr. Cope's gardener, that the Victoria Regia was first brought into bloom in this country; and since then many wealthy families have had conservatories erected, and fountains put up in them, and now succeed in growing and blooming the Victoria in great splendor.

We now have every desirable mode of culture in successful operation in Glass-houses throughout our nation, so it is folly to not put up glass-houses for fear they may become failures; we have plenty skillful gardeners to take good care of them, and make them pleasures to their owners.

What an unspeakable pleasure this culture of Exotic plants in winter affords to those who have the means and liberality to encourage it. What a beneficial change for the lungs, to leave the arid air of sitting rooms, and go into the moist and sweetly perfumed atmosphere of plant houses; and how pleasant for the eye-sight after being wearied with looking long upon books, to go and look at the green foliage of the growing plants and their beautiful blossoms of many colors.

I verily believe that the wealthy could add ten years to the length of their lifetimes by a moderate indulgence in this health giving pleasure. We have often cause to mourn over the loss of kind wealthy friends who have allowed avarice or narrow mindedness to deprive them of the benefits of this life preserving amusement. A bounteous providence has provided the materials—man has devised the means for success—what else is needed? nothing but the spending a part of an over-stock of "filthy lucre" which no one can carry to the grave with him.

"Turn ye, turn ye, why wilt thou die?" said he who came to save us.

A NEW VINE TRELLIS.

BY MR. T. G. YEOMANS, WALWORTH, N. Y.

No argument is necessary to convince a practical grape grower that a firm, tight trellis is indispensable to the most successful culture of the grape. How most readily to construct it

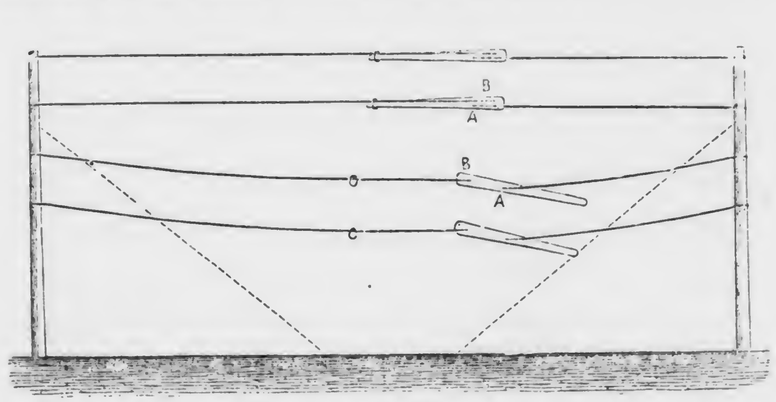
and make it permanent is the object of the improvement, illustrated by the following cut, which shows two vines slackened as in winter for its protection.

The levers attached to the wires are for putting the wires in position, where they are kept by slipping the rings on the wires over the ends of the levers, or slackened by slipping them off.

It will be readily understood that a wire trellis, tightly put up to substantial posts, must by some means be relieved from the strain that would result from the contraction of the wires in cold weather, which would either break the wires or draw the posts out of place, so that in the following spring the wires would be loose and vines could not be well trained thereon.

Various plans have heretofore been devised to relieve the trellis from such strain, but no one has been found simple and practical enough to commend it to public favor, or to be put into general use even after being attached to a trellis; and non of them provide a ready means of again bringing the wires to precisely their original position and tension when desired. This invention provides not only the most simple and ready means of slacking the wires, so as to avoid all strain or damage to the wires or posts, but the equally simple and easy method of bringing them again precisely to their former position and tension; and with such facility and ease can the operation be performed, that a boy may readily loosen or tighten many acres of trellis per hour.

The end posts of a trellis being firmly set and braced, nearly all the intermediate posts which are usually set about two rods apart, and which need to be good posts in a common trellis where the wires are not kept firmly in position, may with this improvement be dispensed with: say in a trellis forty rods long, one middle or intermediate post and eighteen good fence stakes are entirely sufficient, the fence stakes serving perfectly the purpose of keeping the wires proper distances apart, while the tension of the wires produced by the use of the levers serves to keep



YEOMAN'S VINE TRELLIS.

the stakes in a perpendicular position, instead of tending to pull or sway them out of place as slack wires would do; and which will save for every forty rods of trellis the cost of about eighteen posts and setting them, and only requiring in their stead eighteen good fence stakes worth but a few cents each, which should be set with an iron bar or hop-bar, thus diminishing the expense of such a trellis at least five dollars, besides the satisfaction and advantage of having a very superior trellis always in good condition.

The item of posts has heretofore in most places been the chief or most important part of the expense, as well as the most difficult to supply. But this improvement will not only diminish the expense of trellising a vineyard some thirty or forty dollars per acre, but greatly facilitate the labor of construction.

[Conceiving there was more merit in this, though so simple, than usual in "contrivances" of this nature, we asked Mr. Yeomans to give us a fuller account of it, which he has done above. —ED.]

GRAPE LANDS IN VIRGINIA.

NOTE FROM "STEUBEN."

In a few hasty notes on grape land and grape culture in Virginia, which I sent you in the fall, I think I promised to renew my visit to Virginia, and if what I learned could promote the interest of my Northern brethren, who like myself have been devoted to this, to me delightful pursuit, I would again write you.

I am encouraged to do so by a short editorial in your January number, in which you say, "We have many letters hoping to hear more from Steuben relating to Grape Lands in Virginia."

I think my last was dated in Fairfax County, Virginia, in September, just as the grapes were ripening.

Soon after I sent you that communication, I left Virginia for my home in the Lake District of New York, where I have long cultivated a vineyard. The loss from early frosts in all the lake region has been fearful for two years past, so that I have determined to plant no more vines in the State of New York.

I left there in October—after examining a great number of carefully cultivated vineyards, near Crooked Lake, where the grapes were frozen during the cold night of the 14th of October,—taking with me some 10,000 grape vines to plant in Virginia.

I reached Fairfax county, and have selected a location about four miles south-east of Centreville, on the Orange and Alexandria Railroad, at a station called Clifton, where there seems to be an enterprising colony from New York, New Jersey and Pennsylvania.

The vines in this region have escaped mildew, and the fruit the rot. The vines have had a beautiful growth, and I predict that the hills around "Popes Head" will be covered with our choice varieties of grapes.

The soil is of a clayey loam, underlaid with a soft rock, giving a perfect underdrainage. This shale is also mixed with the soil, and is easily dissolved by the action of frost and sun, forming a natural manure. It is largely impregnated with iron and magnesia, and is of volcanic formation probably.

Catawbas near Clifton ripen without fear of frost in September. Iona, Israella, Diana, Roger's No. 15 and 19, Delaware, Concord were about equally healthy. No blight or mildew. I do not think that there is any better soil or climate in either Europe or America, and I have examined vineyards in both countries for vine culture.

The Peach, Nectarine, Pear and Apple all do well.

The markets of Washington and Baltimore are within about one hour and one and a half hours, respectively.

They received and sold a very large amount of grapes this year from the West. I find I can purchase the best grape lands at $25 per acre. I see no reason why they will not be worth two hundred.

The climate is celebrated for its salubrity. Weak lungs are healed; to this I can testify, as I found two parties from near Crooked Lake, N. Y., who consider themselves almost cured.

The station agent at Clifton can be relied on, he is from Chemung county, N. Y. I think there is less crime and disturbance here than at the North.

Property is perfectly safe, and people very friendly. The country through neglect is almost a wilderness, but is cheaply reclaimed.

P. S.—Distance from Washington twenty miles—about 600 feet above tide; this may account for mildew on the Potomac, and none on "Popes Head."

At Clifton, the station agent here will answer any inquiry, his name is E. B. Georgia.

In my next I will tell you what was done down here during the war in grape culture.

CULTIVATION OF INDIGENOUS PLANTS.

BY A CANADIAN CORRESPONDENT.

Reader, has it never occurred to you during your rambles through the fields, or along the green paths in the deep shades of the primeval forest, that many of the flowers and shrubs you tread under your feet, or brush aside from your path, might, with a little care, be made to add to the attractions of your home? Thoughts such as these seem to have occupied the attention of some who have long been gathered to the resting places of their and our forefathers in those sea-girt isles whence so many of us have sprung. With them, thought ripened into action, and many of the floral treasures of our country have long since become familiar as household words among the cottagers of Great Britian.

As long ago as the reign of Charles 1st, Tradescant, the king's gardener, and in the next century, Catesby a distinguished Naturalist,

who twice crossed the Atlantic (in 1712 and 1722) to examine the natural productions of this continent, made collections of American plants and seeds and introduced them into England, where they were highly prized and very shortly generally cultivated. Both these men have had their names handed down to posterity in connection with the flower they loved.

Tradescant's name was given to the Spiderworts (*Tradescantia*) one variety of which, *Tradescantia Virginica*, is now a very common flower in English cottage gardens, although not so generally cultivated in this country. Catesby drew attention to the wild lily of the Southern States (*Lilium Catesbœi*) which bears his name. These men have been succeeded by many others who have wandered East and West, North and South over our country, until there is hardly a plant to be found which is not delineated in one or other of the publications of these indefatigable plant hunters. And this search after and introduction of our plants into cultivation in other countries is still going on; even within the last ten years, well known Canadian plants have appeared among the novelties, offered by leading seedsmen in England and the United States to the public. Among others thus recently brought to notice may be mentioned the Scarlet Lobelia (*Lobelia cardinalis*), the Pitcher Plant (*Sarracenia purpurea*) and a variety of wild bean (*Apios tuberosa*).

It was somewhat bitterly remarked by an American, some years since, on seeing the American plants at one of the Horticultural Exhibitions in London, that the United States was then almost the only place in the civilized world where a collection of American plants could not be found. Our trees and shrubs: our Kalmias, our Cypripedias, our Asters, our Trilliums, and scores of other plants are cultivated in England, but where can they be found, save in the wild wood, in America. If we had nothing worth cultivation the case would be different; but it is not so, from early spring until the frosts of autumn bring our horticultural season to a close, we have a constant succession of flowers beautiful in their wild state, and doubtless, capable of great improvement by judicious cultivation.

Taking them in the order of flowering, I will mention a few, and only a few, of our wild flowers, which would be an ornament to any garden. First in order comes the Hepatica (*Hepatica triloba* and *acutiloba*), which pushes its flowers through the leaves scattered over the soil by the winds of the last autumn, almost before the snow has left the ground. We have the Hepatica of two colors, shades of blue and pink running almost to pure white. The flower does not remain long in bloom, but as the blossoms fall off the, at first woolly looking, but afterwards dark gloomy leaves, burst forth and retain their freshness till the snow comes again. The Hepatica may be grown as an edging or in single roots scattered along the borders. Like most of our indigenous plants, it requires to be somewhat shaded.

Next to the Hepatica may be mentioned the Canadian Blood-root (*Sanguinaria Canadensis*), a showy flower with large white petals, and palmate leaves of bluish green. The Blood root improves much by cultivation, it requires rather rich soil, leaf-mould is perhaps the best, and not too much sun. The root of this plant is used as a dye and is also said to be useful in the cure of coughs. It is besides used as an emetic, but in large doses is alleged to be poisonous.

The Trilliums, Red (*Trillium erectum*), White (*T. grandiflorum*) and Painted (*T. erythrocarpum*), may also be noticed here. All three varieties grow well and, with care, will improve by cultivation. These flowers from the three-fold division of the leaves, sepals, and petals, are readily distinguished, even by persons who have but a slight acquaintance with botany. The Red Trillium is very generally found by the edge of woods or under the shelter of detached clumps of bushes on old pastures. The Painted Trillium prefers the sides of rocky hills or ground from which the timber has recently been burned. The White Trillium seems to require a good soil and is, in places suited to it, very profusely scattered through the open woods, its snowy blossoms almost rivalling the White Lily (*Lilium Candidum*) in size.

The Golden Corydalis (*Cordyalis aurea*) must not be overlooked, more particularly as it flowers very freely and remains in bloom until scorched up by the heat of July. This plant prefers limestone debris and will do well on rockwork. It does best in an exposed situation as it is apt to run too much into foliage if shaded.

The Canadian Columbine (*Aquilegia Canadensis*) is well worth a place in any garden, its showy red and orange corolla is very handsome. The Columbine thrives best on rocky slopes, but is not by any means unwilling to adapt itself to more cultivated localities.

In spring the flowers succeed each other so rapidly that I had nearly overlooked the Dog-tooth Violet (*Erythronium Americanum*), one of our earliest and gayest spring flowers. I have not succeeded very well in the cultivation of this flower, but I have no reason to suppose that it will prove more difficult to manage than any of the foregoing. In its wild state it seems to thrive equally well in the field or on the hillside, and as it blooms very early, it might be made to add greatly to the attractions of the flower garden at a time when flowers are scarce.

I might go through a long catalogue of plants, each of which possess beauties sufficient to warrant its introduction into our gardens, but probably enough have been named to show that there is no lack of choice, seeing that the list of spring flowers is by no means exhausted whilst the representatives of summer and autumn are wholly untouched. There can indeed be no doubt but that a fair show of flowers, all indigenous, might, with care, be obtained throughout the season. It will be found with wild flowers, as with cultivated ones, that one of the main points to be looked to is situation. Many plants will not do well in the full glare of the sun from morn till eve; and this will be found especially true of native plants, many of which are found in the shade of our forest trees and soon die out when that shade is taken from them.

EDITORIAL.

CHARACTERS OF NEW FRUITS.

In accordance with our practice to give in our pages all matters of public interest, that it is at likely any large portion of our readers may be interresten in, we gave last month a report of some proceedings of the Alton Horticultural Society, in which appeared some strictures on the way new fruits are brought out. It is of vast importance that the sources of our Horticultural intelligence should be kept free from suspicion; and it is not to be wondered at that a respectable society like the Alton, reading a year ago that the public had become tired of having journals edited by persons "connected with horticultural establishments," should now find the publishers of this statement more deeply "interested" in the character of a new fruit, than ever was any of the other horticultural journals whose morality this one was born to enlighten. This Society now finds these gentlemen binding their journal and a new fruit so tightly together, that they must become pecuniarily interested in all that is said in its favor, and very averse to admitting anything that might be said against it. Having been educated to abhor this interested immorality, the Alton Horticultural Society, or some of its members, had a right to hold up their hands at the lapse from virtue exhibited by their teacher.

Now this we take to be the great point of the discussion, although by the way in which the name of the Wilder Strawberry is brought in, it might seem as if this Society was prepared to place this variety at once on the "worthless" list. We did not understand it in this way; and we did not suppose any one else would, for we took it for granted that every one knew that this variety has not yet been sent out,—that Dr. Hull nor any one else has had any chance to test it, and that, therefore, these gentlemen could only have meant to speak of the general principle of the thing. But we see that Mr. Fuller in *Whitlock's Recorder*, seems to overlook this point, and we therefore suppose that others may. Mr. Fuller copies the notice, and refers to his former opinions of the necessity of having some good authority to give a character to fruits before they are sent out. Certainly in this case no one could want better authority for the value of a fruit than the distinguished and honored gentleman whose name has been unfortunately mixed up with this discussion. Mr. Fuller must have forgotten this when he penned the remarks, for we are sure he has as high a regard for the worthy President of the American Pomological Society as we have.

Surely we have no cause to defend *The Boston Journal of Horticulture*. No one would expect us to do that favor for one which commenced its career by insulting its contemporaries; but we

must do it the justice to say, that if the authority which Mr. Fuller contends for is all that is necessary to give a strawberry the character that it will do well all over the Union, the publishers of the *Journal* should have his praise rather than his blame. For ourselves, we have no doubt this strawberry is all that Mr. Wilder claims for it,—but every ones knows how frequently a strawberry fails outside of a few favored localities. Whether this one will or not remains to be seen.

We now come to the main question : 'How, shall we relieve the market of the many worthless things annually sent out?" Sending plants to different localities to be tested will not do. We, and we doubt not the intelligent reader, can see much against it. Authority,—and especially the authority of Societies—will not, for that has been tested and failed, and we suppose the advocates of this method will scarcely care to ask us to give the instances. We must go for a remedy to the source of the troubles, which is *the great haste* of people to get ahead of their neighbors with a new thing. Everything that is advertised, they must buy, no matter how unknown the characters of the parties "bringing out" the novelty, for fear it "may" be good, and they not be in the ring to participate in the "big profits." When deceived they cry out for "remedies."

For our part, we have no sympathy with these people. We have no remedy to propose. Let them suffer. If horticultural Journals which wait for the information from all quarters, before venturing to recommend a thing for general cultivation, are too slow for their fast friends, they must study out some better plan for themselves. We shall try to see that those who do wait until we can tell them something, shall at least not be deceived.

MANURE AND VITALITY.

Mr. William Saunders contributes an excellent paper to *Hearth and Home*, illustrating, by some anecdotes of Lawton Blackberrries, what we have long taught our readers, that hardiness is not so much owing to mere temperature, as to other conditions of culture and climate. Every attention was given to the blackberries planted on "highly enriched soil," "kept clean and cultivated." For two successive winters the plants, proving "tender," were killed to the ground. The bed was abandoned—"grass and weeds were allowed to grow"—a "thickly matted sod occupied the entire surface." All this was "mowed out" during the end of summer, and the strong canes left were found "hardy" next year. For "several years" this was kept up. "Subsequently a top-dressing of manure was spread over the surface," and "now" this is a portion of the yearly routine ; and the Lawton Blackberry is esteemed a "hardy" and "valuable" fruit.

We trust that if we have yet left any Western friends, who believe that that "notorious *Gardener's Monthly* is giving advice and teaching which will prove a great blow to fruit culture," they will read, mark, learn, and inwardly digest these facts,—and if their hunger still remains unsatisfied, we have no doubt but Saunders could provide them a little more food of the same sort.

On this subject we begin to feel that we have finished our fight, and done the work which it was given us to do. So many intelligent pens are enlisted in the cause, that we may safely leave it to them, and turn our arms away—not to rest—but to combat another error from another quarter ; but which has had no less an evil influence on successful fruit culture. This error is, *that a rich soil is fatal to the health of a tree.*

Mr. Saunders, whose friendly aid in our general views, we have impressed into our service, echoes the universal error in this particular point, in the same chapter, when he thus puts the case :—People treat plants to high stimulants, hoping thereby to enhance the value of the fruit, but this stimulus weakens the vigor of the plant. "High stimulants" are further explained to mean, "sufficient manure to induce a succulent growth of immature wood, to be killed during the winter."

Well, we confess we once believed in this too ; but we have had the luck to see manure heaps piled up annually around pear and apple trees near dung-yards ; to see *Blackberries* thriving in amazing health in neglected corners near compost heaps ; Raspberries in joyous luxuriance near old hot bed grounds ; and in many other instances have watched and noted that wherever the surface roots are *never* disturbed—wherever the manure is served as a top-dressing and *never dug in*, plants never get too much "stimulants"—never get unhealthy except from epidemic causes ; but always grow in health and vigor and never cry "enough." We know why this is so, but will not philosophize now. We will, however, express our decided opinion, that this plan of half starving things to make them healthy, will go the way of the theories about half feeding and half clothing children. We now give them warmth and exercise, and feed liberally ; and so with trees, no matter how much food you give them, only let them have *fibrous* roots enough to take up, and leaves enough to digest, and all will be well.

SCRAPS AND QUERIES.

DEATHS OF PHILADELPHIA HORTICULTURISTS.—As we go to press, the death of Vice President Harmer, of the Pennsylvania Horticultural Society, at the early age of 42, is announced. In these latter days no one has done so much for Philadelphia Horticulture as he. The new Hall—the pride of Philadelphia Horticulturists—would perhaps never have succeeded but for his determined energy in pushing it through, despite obstacles that would have frightened many a less brave man. He looked forward with pride to the Union of the Pomologists under its roof next September; and his associates, in preparing for the great national festival, could meet with no greater loss.

Mr. Joshua Longstreth, who, for nearly half a century has been one of the most liberal exhibitors of rare plants, fruits, and vegetables, has at last passed away, after having had his span of life lengthened on pretty well towards a century. This Society has few good men to spare, though its nominal members exceed six hundred. To have its youngest and best blood, and its oldest and most untiring supporter, both go down in one week to the grave together, is a heavy blow to it.

CHRISTINE GRAPE.—We have the following note :

"*Hestonville, Jan. 20th :*—I notice in a late issue of the *Telegraph*, that my friend John Rutter, of West Chester, has been drawn into a controversy about the Christine, or Telegraph Grape. I would state that for two years past I have secured all the spare cuttings of the original Christine, as well as many others grown immediately from it, and sent them to him for propagation. I also gave Major Freas a vine from the original a few years ago.

Considering this due Mr. Rutter, without discussing the merits of the Grape,

I am Respectfully,

EDWARD W. HESTON."

[We have noticed the controversy referred to, but have not referred to it, because it was evident to us that none of them who had written about the matter, had read the article complained of ; if they had, they must have seen that no injustice whatever had been done to Mr. Rutter. Our correspondent simply asked, in his own way, whether Mr. Rutter did not know that a Grape, supposed to be unnamed, and therefore called the Telegraph, was afterward found to be already named Christine? Or, as a gentleman of intelligence, acquainted with Pomological rules, knowing that Christine was the proper name of the Grape,—had he another Grape distinct from the other, called Telegraph ?

We think "Hestonville" justified in asking the question; and instead of any injustice to Mr. Rutter in having it asked of him, the injustice comes from those who have declined to answer the question. "Hestonville" can, however, take care of himself.]

DISHONEST NURSERYMEN.—It is very easy to get a bad name with some people. A correspondent of an agricultural journal writes that he sent money to a distinguished Southern nurseryman for fruit trees. By miscalculation he sent more money than necessary—three dollars. To balance the bill the nurseryman sent eleven trees of one kind instead of three as ordered. The correspondent "put this down as a Yankee trick." That variety "was no good or he would not have selected that one to send so many of." True, he afterwards found it was a good thing; but it shows on what a slender thread a man's reputation may hang, and adds one more reason to the many we already have for our general rule, to refuse these personal matters in our columns.

POMOLOGICAL PATENTS.—This subject was brought up at the recent meeting of the frui committees, of the Pomological Society in New

York, and very properly decided by President Wilder to be out of order; as meeting for a special purpose, to represent the Society by its authority, they would transcend their authority by considering any other subject, than the revision of their fruit list. To meet the objection, immediately on the adjournment of the regular session, the members formed themselves into "a meeting of fruit growers," with Mr. William Parry as Chairman, and F. R. Elliott as Secretary, and it was, without a dissenting vote, *resolved, that such a law would not be practicable or desirable.* It is perhaps fair to say that Mr Caywood, and Mr. Fuller, two advocates of the measure, were not present when this plan of meeting Mr. Wilder s objection was thought of.

Digging Amongst Fruit Trees.—This subject is at length awakening attention even in slow and staid old England, where it is so very hard to get the wagon of progress out of the venerated old ruts. In a discussion of the subject recently in one of their journals, a correspondent says that one of the most successful Strawberry growers of his time, the late Mr. Keen, raiser of Keen's Seedling, after a lifetime of observation had come to the conclusion that shallow digging was the best for the Strawberry crop; although the correspondent himself thought it absurd not "to let in the atmosphere" by deep digging.

Mildew on Roses.—*H. C. H., McGregor, Iowa.*—"Will you please to tell how to rid my rose bushes of a white mould like substance that comes on the young leaves and stems. Soon after its appearance the leaves wither and will crumble to the pressure of the fingers. Have tried syringing with water, with soapsuds, and with sulphur mixed with water, but all to no purpose."

[Mildew is very often the consequence of disease—in roses particularly so. You will most likely find, on examination of your rose roots, that the *fibres* have *been destroyed* by over watering. The best remedy will be to take them at once out of the sour soil, re-pot in sweeter earth, and be very careful about watering, until the pots get full of new roots. Sulphur in water or soapsuds will frequently cure mildew when it spreads without much root disease.]

Enquiries about Shade Trees.—St. Louis is—perhaps—for a city of her age, one of the worst shaded and poorest ornamented cities in the Union. Not but thousands and thousands of trees have been planted, but the legion of foes, living and dead, render success a very up-hill business. Formerly the Yellow Locust was largely planted, but the borer became as universal as the trees, and swept them out of existence, so that scarcely a vestige of them remains.

Of late years the leading street trees have been the White Elm, the Silver and Scarlet Maples, with a sprinkling of Silver and Lombardy Poplar, Catalpa and Ailanthus, Tulip Tree, Sycamore and some others; but the drop worms are now becoming so exceedingly numerous and troublesome, as almost to threaten annihilation, especially on the Elm and Maple, less so on the Poplars and Sycamore; while on the Catalpa and Ailanthus I do not observe any; the insect apparently does not attack these two at all.

But a worse enemy than the drop worm (I think,) because more insiduous, is the Red Spider, which pest, two hot and dry summers, has produced a most baneful effect, on some kinds of trees; the Elm and Maple also get it, the foliage of the whole tree turns a rusty color, is thin and shrunken, casts but little shade, and altogether wears a most sickly aspect; all of which I think is the work of the Red Spider. I called the attention of our State Entomologist to this last summer, and he gave it as his opinion that Red Spider never attacked trees in open air; (but I know it does) he promised to investigate it, but presume he has not yet found time.

Here again certain trees show exemption, first of which is the offensive Ailanthus, next the Catalpa, neither of which appear to be touched, while the Lombardy Poplar maintains its foliage dark and shining, apparently unharmed also, and so of the Silver Poplar and Sycamore. For a season or two past the Sycamore appears to be in great demand, doubtless for three reasons: first, because it is easily procured; second, because it bears transplanting well; and third, because so far it appears to do well in our streets.

But I notice by your "Hand-Book," now 16 years old, you say, "This tree was formerly in much demand for its shade; latterly (suffering from late frosts, probably) it has fallen into disrepute from its unhealthiness. I (you) believe it carries the disease with it even to other countries."

How does this disease manifest itself permanently—have never observed any here, nor injury from frosts that I know of?

What is the latest in regard to this tree, as a city tree, and what has been found to be best in

Philadelphia and New York City; and what of diseases, insect foes, and remedies. I have heard long ago, you had the drop worm bad?

There are a few examples of the beautiful Tulip Tree doing well here in the City; what of it also, as regards insects, coal-gas, lime-dust, &c., &c. Respectfully,

Carew, St. Louis, Mo.

[We have not examined critically, but have seen what we believe to be the Red Spider, and if not that, some near ally, on trees in many parts of the United States. High upon the Allegheny Mountains we have observed them so numerous, that we have paused to inquire if it was really an instance of wonderful spreading of an introduced insect, or whether it was really indigenous. In this "wild state" it seems most fond of clover and oxalis, and has no doubt spread with these plants together. We do not know how to help their ravages on this immense scale. As for the drop worm that is so easily gathered off, that any city that refuses to *compel* its citizens to take them off, deserves to have no shade trees. The Sycamore (Platanus) everywhere that we have seen east of the Ohio is subject to the disease mentioned. At the writing referred to, it was believed to be early frost; but now it is understood to be a fungoid effect. We should be glad of the experiences of others as to the best trees for cities, and will then add our own to the rest.]

Gardeners and Situations.—In the course of the year, *hundreds* of letters reach us about these things, most of them kindly offering to remunerate us for our trouble. We have usually replied to these friends that we have not time to attend to it, but the labor of such writing is growing so onerous, that we are compelled to announce that *we cannot even reply to letters of this kind.* Why do not some Horticulturists establish a reliable agency of this class? Paschall Morris what do you say?

A Story with a Moral.—Once upon time a being, who had probably descended from an orang-outang or chimpanzee, might have been seen in company with a woman of singular grace and beauty. The contrast was so striking that irreverent urchins could not but utter as they passed, "Beauty and the Beast," much to the wonder of the homoidal development, who could not see "why they thought his wife so ugly."

We suspect the foundation for this story was discovered in Boston, where a journal—possibly an "enemy," or a "rival," who for a long time had been taking special pains to depreciate "all its contemporaries,"—to point its virtuous finger at their "low tone," and pout its youthful lips at the bare thought of their "interested connections," has "once on a time," and that last month, been seen to stop and wonder at the "alacrity" with which its own lack of lovliness is commented on! Well, if it ends in an improvement of its manners, we shall not regret our share in the "advertisement" it affects to be so much pleased with.

Cultivation.—It is strange that the barbarous system of "cultivation," which has produced the almost utter failure of fruit culture all over the United States, should find a single advocate among intelligent men, instead of the many scores which we do find. Day by day, however, we find them coming over to our assistance, and giving the old heresies some pretty hard hits. The following "sledge hammer" blow from the pen of our friend, Henry Ward Beecher, is one of the best we have lately seen. It is put in the shape of a "cure for Canada thistle," and is true, every word of it, and as true of fruit trees as of Canada thistles:

"The only way to exterminate the Canada thistle is to plant it for a crop, and propose to make money out of it. Then worms will gnaw it, bugs will bite it, beetles will bore it, aphides will suck it, birds will peck it, heat will scorch it, rains will drown it, mildew and blight will ride it. All nature helps weeds and runs down crops." We have not the least doubt in the world but that, if the same system of culture, as is generally given on fruit crops, was given the Canada thistle, it would die out in two seasons.

Tomatoes.—We have from our correspondent Mr. Blodgett, Jan. 20th, some Tomatoes kept on the plan before given us; they were very superior, showing how easily they may be kept if well ripened, which is the peculiar merit of the plan he recommends.

Plums—*R. B. S.*—We doubt whether much can be done by merely planting a few trees in chicken yards to keep off curcul Better to plant a few dozen, in a proper place and enough

to make it worth while to shake off the insects on the Dr. Hull or Barry plan.

GENTIANA ACAULIS.—*J. B., New York*, says: Raising Gentiana from seed,—a flat seed pan placed in a large saucer always full of water,—seeds sown when *newly gathered*, and covered very lightly, or sown in chopped moss, will germinate freely,—old seed of little or no value. I may be able to help your correspondent, F. S., Tipton, Indiana, to a small pinch of Gentiana acaulis, but could not positively promise till I see how it comes out in April, as it is perfectly hardy and only suffers in the hot dry weather.

PERSIAN PLANT. — A correspondent from Adam's Run, South Carolina, sends a leaf for name, with the following note: "a beautiful and fragrant evergreen, known here as the 'Persian plant,' introduced into our gardens by my grandfather, where from I cannot say. It is hardy, and contrasts well with the darker evergreens, and stands clipping well."

It appears to be *Illicium floridanum;* but it may be *I. religiosum*, which looks very much like the other in foliage. It is hard to name a thing from a single leaf.

THE AMERICAN POMOLOGICAL SOCIETY.—The meeting for the revision of the Society's fruit catalogue was very well attended, and was exceedingly harmonious and pleasant throughout. It was to be held in the rooms of the "*Agriculturist*," but too many for the room responding to the call, that journal liberally engaged rooms at the Astor House. Very few new fruits were added to the old list—a few were taken off altogether, and others found to do well in other States were added. The work accomplished will greatly facilitate business at the regular session in Philadelphia, next September. Messrs. Wilder, Barry, Ellwanger, and Manning, who had just returned from a tour South, speak feelingly of the kindness with which they were everywhere met; and though the Southern Pomologists are yet poor, so many expressed their determination to come to Philadelphia, that a very interesting time is expected.

GARDENERS IN THE SOUTH.—Recently a correspondent from Nashville wrote to us that gardeners would be disappointed going South. A correspondent of the *Dixie Farmer* noticing this says:

"There has been no time since the war when there was not a demand for a first-class gardener in this vicinity. We want the best the North affords. No time, as you know, in the history of Tennessee has horticulture or floriculture been in a more flourishing condition. Nurseries and greenhouses are springing up in every direction, and plenty room for more."

PURSH'S JOURNAL.—We have been asked to give a portrait of this early pioneer of American botany; but so far as we know, there is no portrait in existence.

"DE PROFUNDIS."—We are amused at the great depth of thought exhibited at times by our horticultural friends. In a speech on the grape, a certain learned Doctor says, the wine of Norton's Virginia "harmonizes unity," and that of the Diana "exceeds in harmonious refinement, &c."

Well! well! "larning is a great thing."

NEW POTATOES.—A few years ago the Early Goodrich was to be *ten* days earlier than any other; then Early Rose was to be *fourteen* days earlier than Goodrich; Early Prince is now to be *ten* days earlier than Early Rose. Thirty-four days is an enormous advance in six years! but does any body believe it? Gentlemen, take warning by the Tomato men; you have our encouragement in your endeavors to improve the breeds of things—we hope you will be paid well for every thing—except those marvelous statements, which we hope will not be charged for in the bill.

KALMIAS.—*Mrs. M. G B., West Philadelphia*, asks:—"Is there no way to cultivate Laurels? I have had them planted very carefully from the woods; but though they live for a few years, they finally dwindle away."

[To succeed in transplanting Kalmias, they should be cut back one-half at transplanting, and set on, or nearly on the surface of the ground, with the soil drawn up and pressed tightly around them.]

THE MENDENHALL DIBBLE.—*A Baltimore subscriber* asks:—"In the February number of the *Gardener's Monthly*, among the notices of books, &c., you mention the Mendenhall Dibble. I would like to know where one could be obtained. I have never met with them at Implement stores, nor seen them described in the catalogues. I have for some time used a worn out bricklayers trowel in preference to the round Dibble; but judging from the representations of the Mendenhall Dibble, I think if I could get one I should appreciate it."

[The implement was sent us by Mr. Mendenhall, of Richmond, Indiana. We believe there is no patent on it, and any blacksmith can make one.]

BOOKS, CATALOGUES, &C.

DECANDOLLE'S PRODROMUS, part 16, second section, containing among other things the *Coniferæ*, by Professor Parlatore.

This work of Decandolle, wholly on descriptive botany, and in Latin, would require from us usually only a general notice, for the benefit of those of our readers engaged in the higher studies; but the Coniferous family has such a wide spread interest for horticulturists, that any thing in reference to it has a wide spread interest. In Europe, practical works on this tribe of plants are of little use without some pretentions to scientific accuracy; and both there and in our country the recent work of Josiah Hoopes takes a high stand, both amongst scientific men and all classes of practical arboriculturists. In view of these facts, we think we shall serve a very large number of our readers, if we make for them a condensed view of the chief points of Parlatores Monograph, we are sure it will interest the American lovers of this beautiful class of trees.

He divides the whole natural order of Coniferæ into 33 genera: Araucaria, Dammara, Pinus, Cunninghamia, Arthrotaxis, Sciadopitys, Sequoia, Cryptomeria, Glyptostrobus, Taxodium, Widdningtonia, Actinostrobus, Frenela, Callitris, Libocedrus, Thuya, Thujopsis, Biota, Diselma, Fitzroya, Chamæcyparis, Cupressus, Juniperus, Dacrydium, Phœrosphora, Lepidothamnus, Saxegothæa, Phyllocladus, Taxus, Cephalotaxus, Torreya, Ginko, Podocarpus, are all he recognizes. Our familiar names become synonyms—Picea, Abies, Larix, Cedrus, Tsuga, Pseudolarix, Ketelaria are all *Pinus*, although these names are retained to distinguish sections. Retinospora goes into the the old Chamæcyparis. Then, although names of other genera are retained, the species are changed to other genera.

Glyptostrobus pendulis (Sinensis, syn.), is carried to Taxodium, where, as Mr. Meehan has shown in his papers in the *Proceedings of Philadelphia Academy of Natural Sciences*, according to his laws of adnate folial evolution, it ought to be classed. *Glyptostrobus* is retained, however, in its single representative, G. heterophyllus, the author considering the crenate scales and semicircular disc or crown at the apex of the scales in the cones, a good distinguishing mark. Cupressus Lawsoniana is Chamæcyparis Lawsonia; Thujopsis borealis, Chamæcyparis Nutkænsis; and all the Retinosporas are found here.

The greatest slaughter, however, is amongst the specific names; many things we hold distinct, and others that we have known by certain names for a quarter of a century, are buried; and their rights and possessions given to a fossil name, which the learned research of the author has dug out of the depths of the literary earth. In *Pinus* particularly, we hardly know where to look for a plant we have long known. Pinus Fremontiana is *P. Monophylla*, which we had already learned to believe. P. Murrayana is *P. Muricata*. Pinus variabilis of Lambert, is *P. inops*. White Pinus variabilis of Pursh, is *P. mitis*. Pinus rupestris, or P. Banksiana, as it is called, is said to be *P. hudsonica*, of Poiret. This will very much interest cultivators, as the R. (picea) hudsonica in cultivation generally is a very dwarf form apparently of *P. Frazeri*, and a totally different looking thing to our "Grey Pine." P. Hamiltoni, and P. Lemonia are varieties of *P. pinaster*. P. brutia, P. Loiseluriana are synonyms of *P. pyrenaica*, which is considered a good species; while *P. austriaca* is considered a variety *Nigricans*, of P. Laricio. Pinus maritima, of Aiton, is also considered one with P. laricio. Fenzlii, taurica, leucodermis, Magellensis and Dalmatica are also synonymous with variety *nigricans*. *P. Pallasiana*

is also made a variety of *Laricio*. Pinus Mugho and P. pumilio are synonyms of *P. Montana*, which has also a host of less known names. P. Massoniana, of Siebold and Zuccarini, is *P. Thunbergii;* but *P. Massoniana*, of Lambert, is a good Chinese species. P. lophosperma, of Lindley, a Californian species, is regarded distinct from *P. Sabiniana*; while Pinus palustris has got back again to *P. australis*. *Pinus tuberculata* is regarded as a good species. *Pinus ponderosa* has numerous kinds given to it; amongst other constituens of Hartweg, Brachyptera of Engelman, Engelmanni of Torrey, Bearsdsleyi of Murray, Benthamiana of Hartweg, Sinclairana of Hooker, Parryana of Gordon. *P. Gregri* is a new species of Engelmann, allied to P. Teocote, from the mountains in Mexico. *P. Teocote* is one to which *eight* of Roezl's names are given as synonyms. Under *P. cembroides* we have Edulis (of Carriere), L. laveana and osteosperma of Engelman; P. Edulis of Engelman, the author says is "certainly distinct from P. cembroides." Under *P. Montezumæ* come *forty-one* of Roezl species, reminding us unpleasantly of money we invested in encouraging his "enterprize." It is remarkable that not one of Roezl's names have been left to stand. P. Ehrenbergi and P. montezumæ, of Gordon, are *P. Hartwegii*. P. leiophylla, a mountainous Mexican species, is also honored by a long list of Roezlian names. *Pinus Cembra* is one of the very few well known Pines without a synonym. It seems to be extended from the alpine regions of Austria, to the borders of Russia. Pinus albicaulis, of Engelman, is considered the same as *P. flexilis*. Pinus peuce, and P. longifolia, of Griffith, are the leading synonyms of *Pinus excelsa*,—its cousin, *P. strobus*, has none. *P. monticola* is regarded as distinct from P. strobus. P. Loudoniana of Gordon, Strobiliformis of Engelman, is the Mexican *P. ayacahuite*.

To be continued.

THE HORTICULTURIST.—In our last we briefly noted the fact that our contemporary had again changed hands. The January number is now before us. The new Proprietor, Mr. Williams, has introduced some new features of interest, and although it is now nearly a quarter of a century since its first establishment by Mr. Downing, it has evidently yet a long career of usefulness before it. We wish our new "Brother of the Press" every success.

PRACTICAL FLORICULTURE.—By Peter Henderson. Published by Orange Judd & Co., New York.

We were very much pleased, in a recent visit to Mr. Henderson's place, to note the spirit of enterprise with which he is imbued, and the success which follows his undertakings. Twelve acres, not devoted to, but covered by glass, all erected in the most substantial manner, and every thing carried on with strict order and neatness, is not a sight to be seen every day. Opinions may differ as to the merits of this or that method of practice adopted by Mr. Henderson, but the fact remains the same, that the education such a business must give a shrewd intelligent man, ought peculiarly to fit him for such works as Mr. Henderson's name is identified with.

This new attempt of Mr. Henderson's will, we have no doubt, prove as acceptable and as useful to the public as his former one.

PHYSICAL SURVEY OF VIRGINIA. By Commodore W. F. Maury.

It is remarkable, that a State so much favored by nature for agricultural and commercial progress, should not have risen to greater eminence than it has, in spite of social circumstances. It is gratifying to find leading men like Governor Wise now acknowledge the fallacy of their old ideas, and lend their aid to a better order of things. Such labors as this of Lieut. Maury will do much to open the eyes of the nation to Virginia's great resources.

ILLUSTRATED ANNUAL REGISTER OF RURAL AFFAIRS, FOR 1869. By Luther Tucker & Son, Albany N. Y.

The pressure on our "Book Column" has kept from notice a few which deserved an earlier acknowledgment. This is one. This is the fifteenth annual volume, edited by J. J. Thomas, one of the editors of the *Country Gentleman*. Whatever the publishers and editors of this excellent magazine do, is always so well done, and withal so modestly done, that to say this is their work, is sufficient to recommend it. "Fruits and their culture" will particularly interest our readers.

AMERICAN HORTICULTURAL ANNUAL.
AMERICAN AGRICULTURAL ANNUAL.
Published by Orange, Judd & Co., New York.

The third year of the series. They contain epitomes of the leading discoveries in the science and practice of agriculture and horticulture for the past year. No other annuals attempt this, which, after all, is the proper idea of an "annual." They stand alone in their usefulness, and are, therefore, essential to any one who would keep the run of what has been done in the world of farm and garden culture.

WASHBURN'S AMATEUR CULTIVATOR'S GUIDE.

Every one has heard of the beautiful Horticultural Hall at Boston, and of the Massachusetts Horticultural Society, and its great influence in the horticultural taste of the country. Part of the hall is leased by Washburn & Co., seedsmen, and whether it is the influence of the hall, or of the Horticultural Society, or of the natural good taste of these gentlemen, or altogether, we cannot say; but so it is, their catalogue is one of the most beautiful we have ever seen. Beautifully bound, beautifully and profusely illustrated, well filled with capital rules and recommendations; it is equal in value and ornament to some of the best enterprizes of publishers of standard works. Washburn & Co., stand high as seedsmen, and we have no doubt must do an enormous business to justify so beautiful a "catalogue."

NEW AND RARE FRUITS.

MYER'S NONPAREIL APPLE. *Synonyms.*—Ohio Nonpareil, Western Beauty (?) Cattall Apple, Myer's Nonpareil.

This is supposed a native Ohio seedling—but as large old trees of it are to be found in New Lisbon, Massillon, and other towns in Ohio, its exact history cannot be traced. It was presented to the Ohio Pomological Society in 1847, and is described in the Society's Transactions of that year as the Ohio Nonpareil. Subsequently it was found that a Mr. Myer's—the owner of one of the oldest trees of its kind—had propagated and disseminated it as the Myer's apple, and hence pomologists have since decided to call it Myer's Nonpareil. In quality it is one of the very best dessert apples of its season. The tree is a strong, vigorous grower, with large stout young shoots, having full, round buds, and large broad coarse thick leaves, giving promise of its ability to endure great and severe changes of climate. As an orchard tree it is of a regularly open and round spreading head, bearing annually crops of even sized fruit, scattered on spurs and twigs evenly over the whole surface. So far as it has been tested, no complaints have been made of its want of hardihood. The fruit is described in the Agricultural Department Report as follows:

Size, large; form, roundish flattened; color, red and yellow marbled and splashed, and with many scattered gray dots; stem, short to medium, small; cavity, regular, open; calyx, partially open; basin, medium depth, smooth and regular; flesh, yellowish white, juicy, rich, tender, mild, sub-acid; core, regular, partially open; seeds abundant, plump and full; season, last of September to early December.—*Western Farmer.*

DUCHESSE DE BORDEAUX PEAR.—A first-class winter Pear is badly needed. Dr. Houghton has found this an excellent variety, and remarkable well suited to our climate. It is thus described:

Medium sized, two and a half inches long and seven and a half in circumference; form, roundish, irregular, imbricated, very often swollen on one side, flattened and sometimes even, drawn in on the other, and divided from the latter by a deep suture, which reaches from the eye to the stem; it is dented and its surface is uneven. The stem is about three-quarters of an inch long, bent and planted in its surface, but bearing at its insertion on one side only a small nipple, fully characteristic. The eye is large and big enough, placed in a deep cavity. The skins is very thick and rough, of a deep brownish yellow, but some parts of it, however, of a lighter yellow. As to the form and color, it bears some likeness to the Fortunee Pear. The flesh is of a yellowish white, fine and melting, sweet and very juicy. It is a delicious pear, equal in quality, and is in truth superior to any kind of

winter pear, without excepting the Easter Beurre. It begins to ripen in February, and continues in perfect state through March and April. Originated by M. Secher, near Angers, from a lot of wild pear seeds. It is very productive.

COLFAX STRAWBERRY.—We have received from Messrs. Purdey & Johnson, Palmyra, New York, the following cut of the Colfax Strawberry.

It was raised in the garden of Vice President Colfax at South Bend, from some seedlings given him by a friend.



[COLFAX STRAWBERRY.]

Messrs. P. & J., in their letter to us, say it is a medium sized fruit, of symmetrical form, growing in clusters ; sub-acid, juicy ; not hard fleshed.

The plant is of the stocky class, as in Agriculturist, and it is represented as a very abundant bearer, and a first class amateur variety. Its claims are moderately presented, and which in these days of exaggerations, may add to its value.

SABLE QUEEN BLACKBERRY.—This variety is said to have been found twenty years ago in an old pasture in Essex county, Mass., and has been cultivated ever since by a gentleman near Boston. We have no specific description of the fruit ; the only reference to its size is, that it sometimes grows as "thick as a rake handle." From all we learn we believe it to be a very promising kind.

THE STARK APPLE, of which we gave an account last month, proves on further acquaintance to be the Pennock. It has failed in our district so long and so badly, that we did not recognize it in these very fine specimens from Ohio ; but have now no doubt about the identity of the two.

FOURTH OF JULY AND TETOFSKY APPLES.—We have the following note from Mr. Hanford :

"It has been claimed by some of our prominent pomologists, that the first is but a synonym of the latter. In some works on Pomology, and some of our most reliable catalogues, it has been so stated. I think it is a mistake, and that they are two distinct varieties. The first is similar, and might easily be mistaken one for the other, but the growth of the tree is different,—the first sending out long strong shoots of very dark color ; the latter, short, thick and quite red. One of our most noted Pomologists, to whom some of the fruit was sent, felt sure it was the Tetofsky, yet on seeing the tree, he wrote, "The fruit and leaves are very much alike, but the wood is distinct ;" "I am glad the mistake has been discovered before it was fully made public." Another well known Pomologist was at my place this summer, and picking some of the fruit from the tree, said he could easily call the fruit Tetofsky, but the tree was not. Mr. Bateham always claimed that they were two distinct varieties, and comparing the two kinds of fruit together, says the Fourth of July is larger, longer and handsomer."

NEW AND RARE PLANTS.

MYRSIPHYLLUM ASPARAGINOIDES. (*Similax.*)—There is no climbing plant in cultivation that surpasses this in the graceful beauty of its foliage, and its peculiar wavy formation renders it one of the most valuable of all plants for vases or hanging baskets, as it can be used either to climb or to droop as required ; in cut flowers, particularly for wreaths, it is now considered indispensable by all florists.

This we have before noticed in our journal ; very old, but very valuable, as Mr. Henderson states.

The following are also from Mr. Henderson's catalogue :

ARUNDA CONSPICUA.—Another grass somewhat resembling the Pampas, but growing higher, with the flower stems drooping to one side, it is entirely hardy ; two large plants having stood in an exposed place in our grounds for the past winter, each producing over 20 flower spikes, which were much admired.

CENTAUREA GYMNOCARPA.—This is another valuable ornamental leaved plant, which is yet comparatively scarce. It forms a diameter of two feet, forming a graceful roundish bush of silvery grey, for which nothing is so well fitted to contrast in ribbon lines with dark-foliaged plants. As a plant for hanging baskets it is also unsurpassed, its drooping, fern-like leaves being very effective.

PANICUM VARIEGATUM.—A variegated grass of drooping or creeping habit, one of the most valuable plants for baskets or vases that has been introduced for many years, its style of growth is peculiarly graceful, somewhat similar to the Torrenia asiatica; the color of leaves may be described as dark green, white and rose, the white and green being about equally divided, the rose shade margining the white slightly ; it attains a diameter of two feet in a few months growth, and thus developed is exceedingly beautiful. When exhibited in 1867, it obtained a a first-class certificate from the Floral Committee of the London Horticultural Society.

LIBONIA FLORIBUNDA.—A neat growing greenhouse shrub, attaining a height and breadth of 12 or 15 inches. The flowers, which are about an inch in length, are scarlet orange at the base, running into deep yellow at the top, in some degree resembling a Manettia. It blooms in the greatest profusion from December to May, and is a great acquisition to our winter blooming plants.

HYDRANGEA DEUTZÆFOLIA.—Introduced into this country from Japan in 1865, but as yet very scarce. It is one of the most valuable additions to our hardy shrubs that has been made in many years ; it is of spreading, slender

growth, plants of two years old being often three feet in diameter and of not more than one foot in height. The flowers, which are borne in panicles six inches wide, are snow white, remaining in perfection on the plant from August to October.

ROSE—"*Gem of the Prairies.*"—It is one of the most valuable acquisitions made to our collection of Roses that has been originated in the last ten years. Being a hybrid between the well known climbing rose, Queen of the Prairies, and the Hybrid Perpetual, Madame Laffay; it possesses the climbing qualities of the Prairie Rose, with the richness of color and delicious fragrance of the Hybrid Perpetual. The color is of a light shade of crimson, occasionally blotched with white. The flowers are large, perfectly double, and of fine form, which are borne on trusses, numbering from ten to twenty buds on each. This will, no doubt, become a standard sort, possessing, as it does, all the free growing character of a climber, with the color of the hybrid perpetual class.

CHRYSANTHEMUM, LOUISE HONORATTY.—An entirely novel variety, never exceeding one foot in height. The flowers, which are produced in great abundance, are deep carmine. The plant, when properly grown, is most attractive, forming a bush one foot in height by eighteen inches in diameter, literally covered with flowers.

CLEREODENDRON. BALFOURII. — A Stove Climber of great beauty. The flowers, which are of a bright scarlet, are encased by a bag-like calyx of pure white, the trusses or panicles of flowers are upwards of six inches in width, and when trained upon the rafters and hanging down, have a rich and elegant appearance. Although a Climber, it may be grown as an ordinary specimen plant in a pot, it being susceptible of being trained in any way. It is continually in bloom, although most profusely during the winter months, when it may be used as a novel ingredient in the formation of bouquets, &c.

DOMESTIC INTELLIGENCE.

NUMBER OF SEEDS IN A POUND.—A correspondent asks how many seeds there are in a pound of Locust seed? Weigh half an ounce, count them, multiply by thirty-two, and the product will be the number desired.

THE PACIFIC R. R.—The *Dubuque Times* contains an article by Judge King, showing that Mr. John Plumbe, of that town, was the originator of the Pacific R. R.

DEATH OF MR. W. W. BEEBE.—This energetic Western Horticulturist recently died at Dubuque. Articles from his pen have several times appeared in our journal. At the time of his death he was Secretary of the Iowa Horticultural Society.

APPLES FOR IOWA. — Mr. Kauffman gives this list: "Red June, Red Astrachan, Early Harvest, Sweet June, Benoni, Early Pennock, Duchess of Oldenburg, Dyer, Fameuse, Trenton Early, Lowell, Rawles' Janet, Westfield Seek-no-further, Talman's Sweet, Rome Beauty, Willow Twig, Wagner, Ben Davis, Jonathan, Wine Sap, and a few others. A few of these are comparatively new, but promise well."

BREEZES NO. 1 POTATO.—Our exchanges say is the best potato ever offered, fifty dollars having been paid for a single tuber.

THE CHERRY CURRANT.—Mr. Fuller says, sold readily in New York markets last season for twenty-five to thirty cents per lb.

PEACHES IN VINELAND.—Mr. Mabbett sold from his peach orchard last fall 31 1-4th bushels, netting him a total return of $174.39, an average of nearly $6 per bushel. His blackberries netted about $90. Mr. M. has only five acres of land, and as he raises many other articles which we have not enumerated, his receipts exceed those from not a few 100 acre farms in the Northern or Eastern States.—*Vineland Independent.*

LONG KEEPING APPLES.—Among the many young farmers that plant orchards for the first time, there are few that know the value of having an apple that will keep fresh for the table through winter, and into the months of May and June. Indeed, there is nothing in the culinary department so healthy and delicious, as a well baked or stewed fresh apple, at this season of the year I will now name a few of those valuable apples, but little disseminated, and their value overlooked. It will strike the unobservant man as a singular fact, that nearly all these apples have their origin in the South. The "Baccolinus," a rather small, handsome, red apple, juicy, just acid enough to be pleasant, and full of vim is during the entire months of May and June in good eating condition; the tree hardy, vigorous, and a great bearer, comes in bearing as soon as any apple I am acquainted with. "Bentley's Sweet," a handsome, large, striped, sweet apple, of fair quality, keeps fresh till the middle or June; tree hardy and productive.

The Chronicle, originating with "Reuben Ragan," is being introduced into Wisconsin, Iowa, and Southern Minnesota, where it proves as hardy as the Wine Sap, and keeps a month or six weeks longer than that valuable fruit. It is a large, rough-skinned Pearmain—shaped apple often splashed and striped with a dull brick-red color, retaining its spicy flavor to the last; not equal in spirit to the Baccolinus, but quite as valuable a fruit. The "Stark Apple" I have never seen, but know it to be grown extensively in Ohio, where its popularity is becoming very great. It is described as an aromatic, rich, sub-acid apple, about the color of our well-known Rawle's Janet, and twice as large, keeping fresh through May. The tree hardy, vigorous and productive.

The "Illinois Sweet," ripening to the palate through March, April and May, is extensively grown in the Southern part of our State; is a large, yellow, sweet, firm apple that will, I think, prove a valuable keeper here in our Northern orchards. The "Shockley" is of average size—or, perhaps, a little under—striped, red apple, sub-acid, fair-flavored, a moderately good one, rivaling the Ben Davis in its excellent qualities of productiveness, hardiness of tree, and early bearing; will, in all probability, win its way into our Northern nurseries, and into our Northern orchards.

Among our proved Northern keepers, too well known to need description, I will name "Little Red Romanite," "Sweet Romanite," "Rawles" Janet," "Wine Sap," "Ben Davis," and, most valuable of all, for its lasting qualities, the "Willow Twig."—J. W. C., in *Prairie Farmer.*

WEIGHT OF CANADIAN APPLES.—A correspondent of the *Canada Farmer* gives the following weight of some of the apples from Ontario, exhibited at the Nova Scotia Provincial exhibition: 6 Canada Gravensteins weighed 1 lb. 15¾ oz.; 6 Nova Scotia Gravensteins weighed 2 lbs. 1¾ oz.; 6 Canada Belle Fleur weighed 2 lbs. 13 oz.; 6 Nova Scotia Belle Fleur weighed 3 lbs. 3¾ oz.; 12 Canada Belle Fleur weighed 3 lbs. 3 oz.; 12 Nova Scotia Belle Fleur weighed 6 lbs. 0¾ oz.; 6 Gloria Mundi—called in the Canadian List;—White Spanish Reinette, weighed 2 lbs. 13½ oz.; 6 Nova Scotia Gloria Mundi weighed 6 lbs. 2½ oz.; 1 Nova Scotia Gloria Mundi weighed 1 lb.—circumference, 13 3-8.

FRUIT CULTURE IN THE SOUTH is encouraging. At Ridgeway, N. C, last fall, amongst many others, one man set out 200,000 Peach trees.

PEACHES FOR CENTRAL ILLINOIS.—Mr. Benton, of Quincy, gives the *Journal of Agriculture* the following list, which ripens in succession for market. Those marked with a single star are commended specially; those with a double star still more highly: *Troth's Early Red, red; Honest John (Yellow), yellow; **Crawford's Early, yellow; **Yellow Rareripe, yellow; **Oldmixon Free, red; *Reeve's Favorite, yellow; *Jacques' Rareripe, yellow; *President, white; **Late Admirable, white or Green; *Beer's Late Melocoton, yellow; **Stump the World, red; *Crawford's Late, yellow; **Oldmixon Cling, red; **Philadelphia, yellow; *Ward's Late Free, red; **Scott's Nonpareil, yellow; *Heath Free, white; *Gaskill's Late, white; *Smock, Free, yellow; *Beer's Smock, yellow; **Allen's Late October, white; *Heath Cling, white; Molden's White, white.

THE PYRACANTHA HEDGE succeeds in the South. Its only objection is a rather slow growth, and being raised from cuttings, will always be costly compared with anything which can be rapidly raised from seed. In some cases it seems to grow tolerably quick. In a recent *Southern Cultivator*, a correspondent says: "I have a hedge planted in November, 1866, which

is now three feet in breadth, and measuring to the top of this year's sprouts, four feet in height, although it was cut down to within twelve inches of the ground last Spring. Like most hedges, it must be kept down for the first few seasons."

GIFT TO THE MASSACHUSETTS HORTICULTURAL SOCIETY.—Mr. Josiah Stickney, of Boston, has given the sum of twelve thousand dollars to the Massachusetts Horticultural Society. It is stipulated that the Society shall hold this sum for the term of thirty years, and from the income appropriate seven hundred dollars annually in the purchase of works on botany, horticulture, landscape gardening, architecture in connection with horticulture, and other kindred subjects; the books to be labelled, "The Stickney Library Fund." The Society, as soon as the mortgage on Horticultural Hall shall be paid off, is to invest the sum in stocks. At the expiration of twenty years the Society is to pay over the amount to the President and Fellows of Harvard College, to be held by them and their successors forever in trust, the income for the support of the Lawrence Scientific School, the better endowment and support of a professorship of botany in said college, or for the improvement of a botanic garden in connection with the college, or for furnishing additional instruction in botany and horticulture, or for the purchase of works on these subjects for the college library.

THE WORCESTER SEEDLING POTATO.—The *Journal of Horticulture* says a committee of the Massachusetts Horticultural Society unanimously decided to be "the best table Potato offered," at that meeting, we presume.

FOREIGN INTELLIGENCE.

THE COCHINEAL INSECT.—Several fine plants of the prickly pear, covered with living cochineal insects, have just arrived at the Royal Botanic Gardens, Regent's Park, from Madeira. Both plants and insects are in a more healthy state than specimens usually imported. The specimens are placed in the greenhouse devoted to the cultivation of tropical plants used in domestic economy—a collection which is daily becoming of more value and interest now that the importance of technical education is being acknowledged.—*Gardener's Magazine.*

INTERNATIONAL HORTICULTURAL EXHIBITION IN GERMANY.—It is intended to hold an "International Horticultural and Floricultural Exhibition" at Hamburg, early in the September of next year. Prizes are to be given for cultivated Vegetables, Fruits, Flowers, Garden Buildings and Appliances, and for Seeds and other articles. The proposed site for the Exhibition is in a park on a bank of the Elbe. Exhibitors will be invited from all Europe, America and elsewhere. Dr. C. H. Merck has been appointed Chairman of the Committee; Senator C. De Chapeaurouge its Vice-Chairman, and Mr. E. L. Behrens, Treasurer.

All communications should be addressed to Dr. Donnenberg and Dr. Gotze, Advocates, Hohe Bleichen, 16, Hamburg.

A LARGE BUNCH OF PEARS, seven in number, and weighing in the aggregate over six pounds avoirdupois, has for some time past been exhibited by Mr. Perkins, nurseryman, Avenue Road, Leamington. They all grew on one stem, scarcely thicker than a common lead-pencil. The variety is the well-known Uvedale's St. Germain, or Belle de Jersey. It is not an unusual thing to see single specimens of this variety weighing upwards of 3 lbs.—*Gardener's Weekly.*

AN ENGLISH ORCHARD HOUSE.—Mr. Rivers gives the following in *London Journal of Horticulture:* To illustrate what our well-abused English climate can do with the assistance of glass, I may perhaps be allowed to give the produce of an orchard-house at Ely, Cambridgeshire, in the garden of Mr. E. W. Harlock. This house, 100 feet long and 24 feet wide, thus occupying an area of only 2400 feet, has produced this season nearly 40 bushels of peaches, nectarines, and apricots, besides a large quantity of choice pears and plums. To a certainty no walled garden in France or in the world has ever produced from the same area a tithe of this quantity of fruit.

CRACKING OF THE STANWICK NECTARINE.—A correspondent of the London *Journal of Horticulture* says: "A few weeks ago I saw a system pursued to prevent the Stanwick from cracking, which seemed to be very successful. Being on a visit at Balbirnie Gardens, near Markinch, in Fife, I observed a very fine crop just on the point of ripening. I inquired of Mr. Temple, the gardener at that place, the means which he employed to obtain such fine fruit, when he drew my attention to a notch cut under each of the fruit about half through the wood. By this method the flow of sap is arrested, and the fruit ripens perfectly without cracking. Mr. Temple also informed me that he prevents the cracking of the fruit in Chasselas Musque Grape by the same simple method.

VEGETABLE PRODUCTS OF N. W. AMERICA.—The seeds of many plants are used as cereals. Thus the seeds of various species of Pinus (P. flexilis, Torr; P. Sabiniana, Dougl., and P. Lambertiana, Dougl.), are all eaten in the parts of the country where they prevail, and are accordingly the "nut pine" of that part of the country, though the name is often thought to apply to P. Sabiniana alone—a fertile source of error. The Indian climbs the tree and throws down the cones to the squaw beneath, who carefully secures them, otherwise the squirrels would make short work with them. The cones are then scorched to open them, and destroy the troublesome resin, so that the winter supply of Pine-seeds, which it has been thought would supply such a harvest to the botanist, is perfectly useless, the vitality being extinct in them. When I visited Oregon in 1865, I found that in P. Sabiniana, as in nearly every other conifer, the "Pine-seed harvest" had failed, and the Indians suffered much. One of these Pines (P. Lambertiana, the "sugar-Pine") yields a sugar, which is occasionally eaten, though it has cathartic properties. It is only found on scorched trees, and in very small quantities. I have, however, heard of a man who devoted himself for a few weeks to the business of collecting it, and obtained 150 lbs. It can scarcely be distinguished from the manna of the shops, except by a slight terebinthine flavor. In times of scarcity, the Indians will eat the liber of Pinus contorta, Dougl. Along both sides of the trail, in the passes of the Galton and Rocky Mountains, many of the young trees of this species are stripped of their bark, from a foot or so above the ground to a height of six or seven feet. This is done by the Indians during their annual buffalo-hunting expeditions from the Kootanie and Kalispelm county to the plains east of the Rocky Mountains, for the sake of the inner bark, which they use as food, as well in its fresh state as when compressed into thick cakes, so as to render it portable (Lyall, Linn. Journ. Bot. vii. p. 141). I am not aware that the coast Indians make any use of it for food. The seeds of Vicia gigantea, Hook, are also eaten. Many species of Grass-seeds (*e.g.*, Elymus arenarius, L.) are collected for food. They are ground in a mortar, or roasted and made into soup. The seed of the wild Rye (Hordeum jubatum, L) is especially held in request among the Shoshones of Southern and Eastern Oregon; and a staple article of diet among the Klamaths, near the Klamath Lake, in the same section of country, are the seeds of the yellow Water Lily (Nuphar advena, Ait.), the gathering and preparation of which I described in one of my published letters.—*R. Brown in "Pharmaceutical Journal."*

PRODUCTS OF AN ORCHARD-HOUSE.—This for your column of facts. The weight of fruit raised from my orchard-house, twenty-one feet by fourteen feet during the last four years. All the trees are in pots.

	1865.	1866.	1867.	1868.
	oz.	oz.	oz.	oz.
Apricots.....	24½	20	59½	122¼
Peaches.....	386¼	338½	293½	299¾
Nectarines	86	20	91½	188⅛
Plums.....	259	20	...	...
Pears.....	74½	...	30¼	291¼
Grapes.....	69	...	...	...
Figs.....	23	28¾	41¼	64
	922=57lb. 5oz.	427¼=26lb. 6oz.	519¼=32lb 4oz.	965¾=60lb. 3oz.

I gave up *grapes* in pots in 1866 and plums in 1867, and have since added nectarines, finding them to bear better than peaches. I practice a regular system of potting and pinching, and never allow the trees to root into the border, and use for syringing a powerful force-pump, which supplies water to all my garden. I should like to know the results from other growers of fruit in orchard-houses.

JOHN MARTEN,
Chilham, near Canterbury.
In Gardener's Magazine.

CHESTNUT GRAFTED ON AN OAK.—The *Revue Horticole* records a successful instance.

THE PERSIMMON IN ENGLAND.—The editor of the *London Journal of Horticulture* says: "In England the Persimmon will only ripen its fruit under glass."

LIGN ALOES.—The new and popular handkerchief perfume, known in England as the "Sacred Lign Aloes," is derived from a Mexican tree called *Bursera*.

HORTICULTURAL NOTICES.

THE FRUIT-GROWERS' SOCIETY OF PENNSYLVANIA.

The annual meeting was held at Harrisburg on the 21st of January. The meeting was scarcely as well attended as in former years, but yet was considered a success. It was voted to adopt the itinerant system—moving from place to place. The next meeting will be held at Lancaster in January, 1870.

In the discussional part of the business of the meeting, the most noticeable feature was—there were no new fruits introduced for recommendation. Under this head, the discussion was confined to the Clarke raspberry, which Mr. Parry had found to lose its leaves in summer—otherwise it was as good as formerly.

The interest rather centered in "how to grow fruit," than how to get new varieties. The talk on peaches was perhaps most interesting—the general impression being that Pennsylvania, contrary to repute, was a good peach State. Many instances of success were reported. In most cases they were of those who top-dressed with compost, and kept the roots near the surface. Most thought that grass was an injury to the peach; but all agree on the necessity of rich soil on the surface. An orchard at Odessa, Delaware, was referred to, which was annually top-dressed, and this year was the only one in the State which was a success. With the best of conditions, however, it was thought peaches would sometimes fail from external causes—with great cold or late frosts. Some preferred low heads—some high heads, some one aspect, some another—some high elevations, others low ground; but there seemed a more general agreement on the manuring and surface-rooting argument. The apple and pear came in turn into the discussion, and nearly the same arguments used. Under-draining was recommended for orchards by some; but others, while agreeing that fruit trees did best on dry land, thought the expense of under-draining greater than the profit, and preferred surface-drains.

In the destruction of insects much talking was expended, but little learned. Whitewash had been found good for the white scale, and lime-water for the aphis which infests the roots of apple trees. Coal oil applied to the branches of trees, before the buds pushed, had been found not injurious to fruit trees, while it destroyed the eggs of all insects on the bark.

Quite a discussion was had on the bird question, but opinions differed whether they were or were not more good than harm. Mr. Kessler, of Reading, said that the English sparrow was now naturalized about that place, supposed to have emigrated from the Central Park.

In grape culture, Mr. Meehan gave his experience in the following formula: To have good success, a soil could scarcely be too warm, too dry, too shallow, or too rich. The enunciation of this radical platform occasioned some surprise; but not more so when it was found the experience of nearly all the speakers confirmed it. Rev. Mr. Colder said at Harrisburg his Concords on low lands did poorly; on dry land they did well. Mr. Kessler found just the same experience at Reading. Mr. L. Reist reported the same of Delaware grapes in his vicinity. The best Clintons Mr. Kessler ever saw were growing in an old stone heap. Dr. Gross did not approve of shallow soils, but found it best not to dig them deep, but to fill up on the surface. Mr. Hildrup, of Harrisburg, had had great success by planting on a very dry soil well enriched with stable manure; he had made last year 50 gallons of wine from 400 vines. Others gave similar experience.

The feature of this meeting was the frequent discussions of scientific questions in connection with fruit-growing. Thus the fertilization of fruit—why fruit trees so often bloom and produce nothing—why trees split in winter—why a tree healthy and perfect, can often exist side by side with one diseased—for which we have no space in our columns, but which will appear in the society's transactions which it prints for its members.

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HINTS FOR APRIL.

FLOWER GARDEN AND PLEASURE GROUND.

We read that, in England, the taste for rare and curious plants is declining. Large greenhouses and stoves for these plants are becoming less common every day. On the other hand, ornamental gardening is on the increase. The so-called "Florists' flowers" are not so much sought for. The Tulip, Auricula, Pansy, and so forth, which one time were so valuable for their perfect forms or lovely tints, are passing away. The lords, dukes and duchesses, who felt honored by having their names attached to these varieties of flowers, care nothing for them now; but the out-door plants—those which come into use in decorative gardening—are more fashionable than ever.

The cause is there as here:—the more general diffusion of wealth in proportion to the population. Fewer can afford the highest luxuries of art, while many more than formerly can enjoy it in some degree. Thus, while gardening on the *average* is more popular than ever, the higher classes of the art are daily dying away.

Thus we see why flower gardening is so popular. It can be enjoyed at so much less a cost, and there are therefore so many more to patronize it. With us, at any rate, flower gardening is becoming one of the most important features of the art; and, particularly at this season, ingenuity is stretched to devise new ways of arranging the flowers, and every information sought out, as to what kinds are best to plant.

We have suffered much in our gardening from adopting too much the plants which have been found to do well in Europe; but our hot dry atmosphere soon destroys plants which last there through the season. The *Calceolaria*, for instance, which serves so important an use in English arrangement, is of no value here.

The best plants for us are what are called *tropical* plants. Of these, valued for their colored leaves, are the Coleuses, Achyranthes, Irisene Cannas, Dracœnas, Alternanthera and *Centauria ragusina*.

Of flowering plants which thrive well in our climate, we have a good selection. The Geraniums are amongst the best, although, botanically they are not distinct from Pelargoniums; yet it serves a good purpose to retain the name as a popular designation of an useful class in flower gardening. The Verbena used to be the main reliance for bedding—but the great ravages of the verbena rust, has made it somewhat unreliable; and, although it is indispensable yet, it does not take the front rank as formerly. There are now double varieties; but for flower gardening purposes, double flowers are inferior. These varieties do not flower as freely as the single ones. This has proved to be the case with the Petunia, the Pansy, and other things, and we suppose the rule will hold good here. The RoseGeraniums flower somewhat steady throughout the year, and are indispensable for their delightful fragrance and elegant foliage.

In the class of scented flowers, the Heliotrope, the Mignonette, and the Sweet Alyssum, command a prominent place. The last is liable to suffer much from the cabbage-fly. A syringing with water, in which a few drops of coal oil has been spread, soon settles his business. There is a variegated Sweet Alyssum which is very pretty.

Lantanas are very desirable; but to have the best results from them, they should be planted in *poor* soil. A very pretty species, trailing like a Verbena, but not much known, is *L. Sellowii*. The varieties of Lobelia make fair bedding plants if not put in too dry a soil, or too warm a situation.

The old *double white* Feverfew is one of the most desirable of bedding plants. White flowers

can be cut from it all summer, and yet have plenty left to bloom. The Petunia, though of no account for cutting, keeps up a brilliant show the whole season. They do also very well in hot places where little else will do. The singles give the most flowers. For cutting purposes, the Monthly or Tree Carnations are lovely things, though they are ugly growing plants, and do not make much show on the grounds. The blue Ageratum is not very showy, but blooms so profusely, that every one likes to have it. The old Nierembergia gracilis is another not very showy plant, but flowers so well, and is so satisfied with indifferent treatment, that one cannot let it go. The Gazania is curious, and makes a brilliant show of orange and black on a fine day, but is not well adapted to a hot place. The little *Cuphea platycentra* has rather too much green for a show plant; but if the soil is not too rich, gives fair satisfaction.

For late summer and fall blooming, we have Gladiolus, (excellent for cutting for baskets and plates of flowers,) Tuberoses, (ditto,) Chrysanthemums, Dahlias, and particularly the Scarlet Sage, without which no garden is complete. These are all very well known and popular bedding plants.

Besides these, there are some not so well known, but which will, perhaps, become as popular for some purposes as the others. The Ivy Geraniums are being much improved, and are just the things for vases and growing over mounds or elevated places. All the forms of Sedums are also excellent for vases and dry places, —as are also several varieties of hardy Cactuses, half hardy Echeverias and other succulents.

Aloes of many kinds suit the centre of these vases and flower beds remarkably well. The variegated Geraniums, and variegated leaved plants generally, do only where protected from hot suns. The common Perilla, with dark colored leaves, however, does best in the full sun. The shrubby New Zealand Veronicas flower most of the season, and are suited to many localities.

The new hybrid Dianthuses promise to be amongst the most popular of bedding flowers. The Bouvardia leiantha and other Bouvardias are rather ragged growers, and seldom have many flowers on at a time; but one can cut for ever from them, and new flowers rapidly succeed. The *Viola cornuta* does not make much show, but blooms well in our climate all summer.

There is quite an excitement on new Clematises as summer blooming plants. They bring yet very high prices, and have to be tested more in our climate, though they will probably be a success. In Chrysanthemums, a great advance has been made in the production of an earlier class of bloomers. It has always been against the Chrysanthemums that they have been a little too late for decorative gardening. Lilies of all kinds are also growing in popularity and cheapness, and there are some double rose-colored Feverfews that add much to the beauty of a flower garden.

There are many hot house plants, also, which seem only just to have had their merits, as summer bedding plants, discovered. Of such are Madagascar Periwinkles, Chinese Hibiscus, Torenias, Angelonias, &c. This list might be much added to, and we should be much obliged if our correspondents would, from time to time, let us know of any they find to have merit in this respect.

FRUIT GARDEN.

Grafting can be continued till the buds of the trees are nearly pushed into leaf. Sometimes, from a pressure of other work, some valuable scions have been left on hand too late to work. It may be interesting to know, that if such scions are put into the ground, much the same as if they were cuttings, they will keep good for six weeks or two months, by which time the bark will run freely, when the scions may be treated as buds, and will succeed just as well as buds taken from young summer shoots.

In planting dwarf Pears, it is very important to have them on a spot that has a moist subsoil, either naturally or made so by subsoiling or mixing some material with the soil that will give out moisture in dry weather. Trees already planted on a dry gravelly subsoil, should have a circle dug out two feet deep, and two or three feet from the tree. This should be filled up with well-enriched soil. If the dwarf Pear does not grow freely, it is a sign that somothing is wrong. It should at once be severely pruned, so as to aid in producing a vigorous growth.

Strawberry beds are very frequently made at this season, and though they will not bear fruit the same year, are much more certain to grow, and will produce a much better crop next year than when left till next August. Though it is a very common recommendation, we do not value a highly manured soil. It should be well trenched or subsoiled: this we consider of great value. In rich soils there is too much danger of having more leaves than fruit.

Buds that were inoculated last fall should not be forgotten; but as soon as vegetation has pushed forth, the buds should be examined, and all other issues from the old stock taken away. It may also be necessary to make a tie, in order to get the young shoot of the bud to go in the way from which you would not hereafter have it depart.

Above all, do not allow the month to pass without posting yourself afresh on the various methods recommended for destroying insects, or preventing their attacks. The advantage of a stitch in time is never more decided than in the great struggle with fruit destroying insects. A mass of information on this point lies scattered through our past volumes, that will well repay a careful reperusal for the purpose alone of refurnishing one's ideas in that line.

VEGETABLE GARDEN.

South of Philadelphia, the more tender kinds of garden vegetables may now be sown—beans, corn, cucumbers, squashes, &c.,—that it is not prudent to plant in this latitude before the first of May; and tomato, egg plants, etc., may also be set out in those favored places. Cucumbers, squashes, and such vegetables can be got forward as well as tomatoes, egg plants, etc., by being sown in a frame or hotbed, and potted off into three inch pots. They will be nice plants by the first week in May. Rotten wood suits cucumbers and the squash tribe exceedingly well as a manure. Tomatoes and egg plants that are desired very early, are best potted, soon after they come up, into small pots. They can then be turned out into the open air without any check to their roots. Of course they should be gradually inured to the open air,—not suddenly transferred from a warm and moist air to a very dry one.

Bean poles may be planted preparatory to sowing the Lima Bean in May. Where bean poles are scarce, two or three hoop poles, set into the ground one foot from each other, and tied together at the top, make as good a pole, and perhaps better.

Dwarf beans should have very warm and deep soil—sow them only 2 inches apart. The Valentine is yet the best early, take it all in all.

Peas should be sown every two weeks for a succession,—do not make the soil very rich for them.

Lettuce, for a second crop of salad, should be sown about the end of the month. The Drumhead cabbage is usually sown for a summer crop; but the old kinds of Cos lettuce would, no doubt, be found very valuable in rich soils.

Early York Cabbage for early use should be set out early this month. It is an excellent plan to make the holes with a dibble first, where the cabbage is to be set; then fill up the holes with manure water, and, after the water has soaked away, set in the plants. It is rather more laborious than the old way—but the cabbage grows so fast afterwards that it pays pretty well.

It is not a good plan to cut all the Asparagus as soon as they appear. A few sprouts should always be left to grow from each, to strengthen the plants.

Celery, with most families, is an important crop, and should be sown about this period. A very rich, moist spot, that will be shaded from the mid-day April sun, should be chosen,—or a box in a frame, by those who have the conveniences.

Few things mark a well-kept garden better than an abundance of all kinds of herbs. Now is the time to make the beds. Sage, Thyme and Lavender grow from slips, which may be set in now, precisely as if an edging of box were to be made of them. They grow very easily. Basil and Sweet Marjoram must be sown in a rich, warm border. Salsafy and Scorzonera like a damp, rich soil.

COMMUNICATIONS.

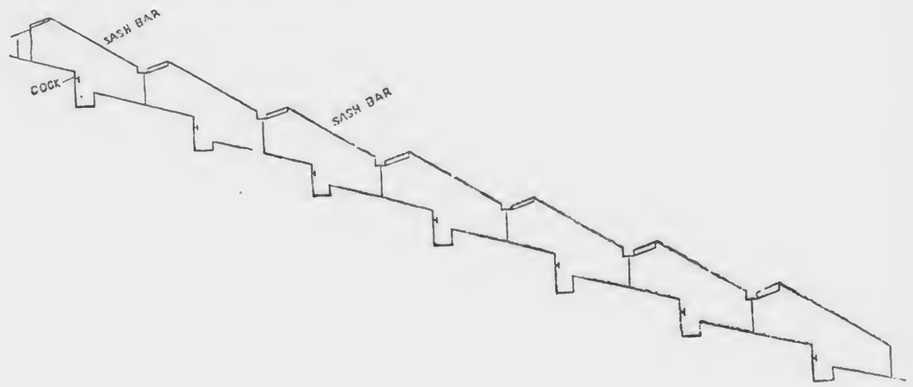
A NEW STYLE OF FORCING HOUSE.

BY W. C. STRONG, BRIGHTON, MASS.

Within a few years great changes have been made in the construction of greenhouses. At the present time the form known as the ridge and furrow, as strenuously advocated and practiced upon, with decided success, by Peter Henderson, is prevailingly popular. This form, for many purposes, has many advantages, and is undoubtedly the best yet devised for growing small stock upon level sites. I will not dwell upon its disadvantages, but will proceed to mention some advantages secured by another plan, which I have adopted the past season.

The site for the house is a hill-side at an angle of about 25°, facing south. The length of the house was staked out at 65 feet, and the width was 93 feet running down the hill. This lot is enclosed by a stone wall, averaging about 4 feet in height above the surface of the ground; the wall being banked up to its height all around on the outside, excepting those spaces for doors. Here we have a shallow cellar on a hill-side, containing about 6000 square feet of surface.

Now for the style of roof. I have another house of about the same size and somewhat similarly situated, which has had a wide unbroken roof up to this year; but the accumulation of snow at the bottom, and the difficulty in ventilation caused some trouble, and induced me to break the roof into three the past fall, to my entire satisfaction. But in this new house the roof is broken into seven, so that a birds-eye view of the roof would make seven houses, with a back ventilator running the entire length of each. The method of construction of the roof, as also the inside ground plan, will be best understood by a simple diagram, exhibiting a perpendicular section of the house, running south, down the hill.



There is need of but little explanation. The long slope, of course is glass, and may be either fixed bars or large sashes, as in my case, where plants requiring summer exposure are grown. My sashes are 10½ feet square, requiring four persons in removal. The gutters seen in the plan are spruce plank 8 inches wide. The short hips are wooden ventilators, 18 inches wide, and in one piece, running the whole length of 65 feet. Such an amount of ventilation will only be required during the burning heat of summer.

No heating apparatus is apparent in the plan. Herein consists one considerable advantage of this method. At the south-east corner of the lower house a cellar is dug, sufficiently large for a stock-hole and a furnace; this is tightly boarded over head, so that plants flourish directly over the furnace, equally as well as in any part of the house. The furnace is for hot air. I procured a section of an old steam boiler, making an arch 5 feet long, four feet across, and of about the same height, at the rather high cost of $20. This arched the common brick fire-place, having fire-bars 2½ feet long. The hot air chamber above and around the arch was encased with brick. A cold air drain was laid from the centre of the house under ground, coming out under the furnace. From the top of the furnace two hot-air pipes branched, one running up the east side and the other up the west side of the house, also laid under ground in dry sand, as a non-conductor of heat. The smoke flue, an admirable concrete pipe made of gravel and cement, manufactured by Day & Collins, of Boston, (which is far superior to and cheaper than brick flues,) runs under the only table which is in the house, in the front of the lowest division, and under the only ascending walk, which is on the west side.

So much for description, and now for the advantages claimed, and the results attained. The first look at the house shows an advantage in heating. The roof lies, as it were, on the surface of a south hill-side, the sides of the house all around being banked with earth, so that only the roof is exposed to cold. The sun's rays striking directly upon so large a surface inside, warms the earth thoroughly, which heat is retained to a considerable extent, and does not cool off suddenly, as in small or in ridge and furrow houses. Moreover the frequent breaks in the roof, and the ease in walking in the gutters and upon the ventilator, tempts one to make use of the cheap and slight, but yet serviceable protection of bass mats. We unroll from end to end, and hitch to buttons to prevent blowing. Our furnace is quite powerful enough without this, and yet the time of two men for twenty minutes in covering, is well spent on a bitter cold night.

Again, the cost of the heating apparatus is inconsiderable, not exceeding $150. Do I hear some one ask how it works? Let me tell you. In the first place we find the cold spot in the house to be just over the door, or rather over the coal bin in front of the furnace. But the difference is only 4 or 5 degrees, and is desirable for the short space thus effected.

The rest of the house from end to end, and from top to bottom, does not vary more than a degree or two, let the weather be what it will.

With the exception of the southeast corner, the centre of the house is a degree or two lower than the rest; and it is from this point that the cold air drain receives a supply for the furnace. Openings are made at each of the walks, at each end of the house, into the hot-air pipes. We have kept the temperature at about 54° at night. Thirteen tons of coal were stored in the fall, which will more than suffice to carry the house through the winter, according to present appearance. It must be admitted that this is remarkable economy of fuel.

With slight exception, the trees and plants in this house are planted. The supply of water is from reservoirs, fed from greenhouses higher up the hill; consequently, there is no need of sending a man to the pump. A hose attached to a stop-cock in each walk, will cause a shower as delightful as June, and reach every corner in twenty minutes.

The vigor of the newly planted Roses, of the Carnations, Peach trees, Lilies, Potatoes, and various other plants, is unmistakable proof that all conditions of plant growth are here secured.

I will raise one or two objections to this plan, in order that I may answer them. First, it may be asked, if the snow will not trouble such a house? Any one who has tried the ridge and furrow system will not ask this question. The roof is very strong—the snow quickly slides into the gutter; and, in ordinary winter weather, in such a south exposure, will quickly disappear. A fall of over a foot, early in January, and somewhat drifted, was not disturbed with the shovel. In an excessive storm, doubtless, the shovel would be desirable, in order to obtain sunlight.

Again, will not the width of wood work, the gutters and the ventilator cast too heavy a shade? No. The ventilator lies in a direct line with the sun's rays, at its mid-day altitude, in winter, and its shadow is almost always within the gutter. Indeed, the shadow of the gutter falls within the walk above, during the most of the day, so that the space under the gutter is as serviceable as any part. There is absolutely no loss of space, as is under the gutter of the ridge and furrow house.

A final comment is made, that this plan is well suited for the situation, but it would not do for level spots. As well might you say, that a model factory, whose machinery was in full play, under the mighty power of a rushing river, would not work as well on the top of a hill. There are sites for greenhouses as well as for factories. If a hill-side is best, why not secure the *best?* It is high time, in horticulture as in other arts, that the very best conditions be obtained.

I submit this plan as an indication of the value of hill-side sites; and in the confident belief that,

in such position, it will be found that, for work generally known as "winter forcing," larger results can here be obtained, upon a given cost, than in any other position.

I will only add, that the total cost of the above described house was under $2000, including the furnace, and brick and concrete walls for the side of the walk, and also the plumbing. I trust that this full statement will obviate any necessity of answering inquiries about the mode of building.

REMOVING OLD PUTTY.

BY JASPER STANDSTILL.

In your January number, page 12, I notice a method for removing old putty. In 1852, I took charge of an extensive private establishment in England. One range of vineries, containing about 4000 square feet of glass, was in a very patched and poor condition—the wood being hard pine was in an excellent state of preservation. I determined to take out all the glass, and replace with new. But the taking out,—there was the rub. The tradesman's item for that part alone was rather too formidable.

Now, I don't know whether I read, or whether I was told it; and I suppose I must, for my head is too thick for much invention. At any rate, I stacked all the sashes in one pile, and smothered the whole with stable manure, just fit to make hot-beds, and shortly it steamed and smoked bravely.

After a few days of this sweltering process, examination showed the putty had become soft and rotten, and the glass was removed as easily as if it had never been a fixture. The sashes were sprinkled with water, and scrubbed with heather brooms, and made to look as bright and innocent of paint and putty as when they left the carpenter's hands ever so many long years before.

HOW CAN WE HELP IT?

BY MR. CHAS. ARNOLD, PARIS, CANADA WEST.

It is doubtful whether there is now in existence one enterprising nurseryman in America, who has introduced to the public any new, valuable variety of tree, plant or vine, but has had his mind perplexed with the above question, in consequence of the villainous conduct of some of those smooth-faced, picture book, tree agent gentry, who are constantly selling spurious articles of everything new and valuable for the genuine. And I feel confident, from several years' observation, that it is a very rare case where the originator or introducer of any new fruit, propagates and sells one thousand plants of the genuine, before ten thousand spurious ones are sold by dishonest dealers.

My mind has dwelt upon this subject considerably of late, in consequence of learning, from good authority, that some scamps in the Western States had been taking orders for large quantities of my Hybrid Grapes and Raspberries, at prices much lower than I have ever sold them for; and as I have never yet sold to any one person more than six plants of each variety of Grape, and not more than one hundred each of these Grapes and Raspberries in the whole United States and Canada—and these not until late last fall—it will appear quite evident that no person can have any quantity of these plants for sale but myself.

It is not the loss of the sale of a few plants that makes these things so annoying; because it is doubtful, in many cases, if the persons who buy these spurious articles would ever buy any plants at all, unless they were forced upon them by these cheats. But when these spurious articles come into bearing, to have one's name bandied about, and called humbug, and everything else that is bad,—by honest men, perhaps, but men who have never seen the true plants that bear the name of the person they so thoroughly berate. This is really annoying; hence the question "How can we help it?"

One person suggests, "publish the name of the scamp in the horticultural papers;" but it is doubtful whether this would prevent the fraud, from the fact that the victims in these cases do not generally read these papers.

The plan that I have thought of following is this: find out the name of the nearest local newspaper where these scoundrels have been operating, and deny, through these papers, that these men have any of my plants for sale. Or to find out some person in each neighborhood, that has given his orders to these agents, and to offer the genuine article to the person who shall have the scoundrels arrested for swindling.

Please say, Mr. Editor, which of these two plans you approve of, or if you approve of either. If both the plans are adopted, it is feared the former will defeat the latter, by frightening the fellows from delivering their orders at all.

ANGERS QUINCE.

BY J. H. CREIGHTON, IRONTON, O.

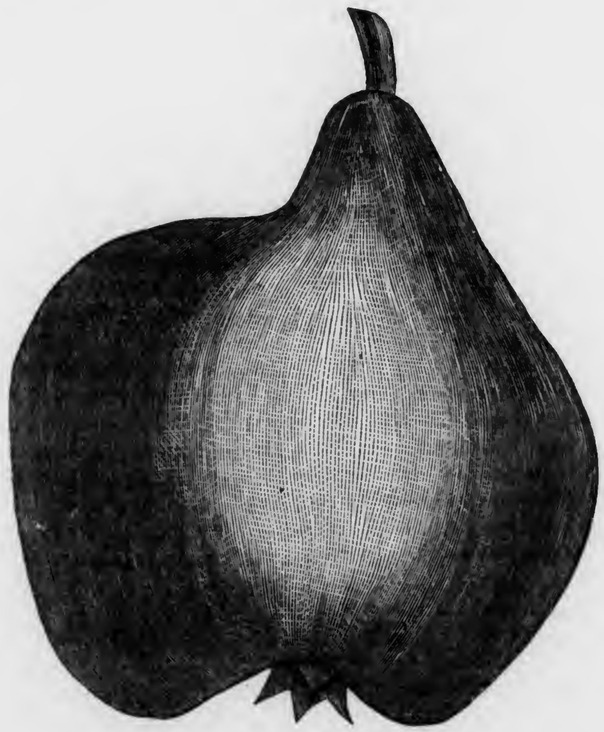
A writer in the Feb. number of the *Monthly* expresses *indignation*, or says it is expressed against persons that have sold Angers Quince for fruiting. I will leave others to settle this,—I write to state a few facts:

Twelve years ago I tried, in vain, to find out the fruiting quality of the Angers, but nobody in this country could tell. I then wrote to M. Le Roy, of Angers, France, who sent me a drawing—a copy of which is enclosed—and the following as to the fruit:

"We consider this kind as the best one, as to the productive quality and size of fruit. This is cultivated on a large scale in our country as being the most advantageous for the market fruit."

I will further state that we have a good many bearing trees that were grafted with pear, but failed. These are now about 15 years old. They were from Ellwanger & Barry. They bear as well as Orange, but vary much in size and quality and earliness. Some of them are much superior in quality to Orange, and about equal in size. We see no difference in the hardiness of tree.

Some are small, some are a little later—but take the whole lot, perhaps 25 trees, they do not differ much from Orange. One thing is certain, that a selection could be made from them that would surpass Orange in quality very much.



ANGERS QUINCE.

QUERIES ABOUT FLOWERS.

BY ANNA GRISCOM, BALTIMORE, MD.

We are very much interested in the Amaryllis, and having quite a number, would like to learn the best treatment for them. We have been truly successful only with the Johnsonii, but have Vittatii, Ackermanii, Longiflora, Lutea, Buistii.—a new one from Europe, the Datuii,—and three said to be Aulicas, but all differing: one having coarse dark leaves, another has fine glos-

sy, medium green leaves, with a sharp keel to them ; and another with long, narrow leaves, of a fine texture. The latter was bought of a gardener experienced in Amaryllis, who told us it was the real Aulica.

Those called Aulicas here have large, coarse looking bulbs, and bear two flowers, of a dark scarlet, with a green base to the petals. Besides these, we have three (name unknown) resembling Longiflora in the leaves. We have not been able to grow them with much success. We have several, said to be from Florida, which have become "small by degrees, and beautifully less."

We have bloomed one with short, variegated leaves. The flower is orange colored, with a light green base to the petals, which forms a pretty star when the flower is fully out. It bears but 2 at a time. It rots off easily. We had, formerly, one nearer a salmon color, which died. The names of both are unknown to us.

We have three varieties of the A. Vallotta purpurea, two of them obtained lately. The last one was taken from a bulb imported from Europe last year. It has a darker green leaf, and a more purple stem than the others. The preceding one has thicker and longer leaves than either of the others, and seem to be of a larger growth. We have bloomed but one kind. One bulb bearing 2 stems, with 6 flowers on each, which are cup-shaped, and do not spread open as the other Amaryllis do. We would like to know, if all the three varieties bear scarlet flowers. We have lost several of these by rotting.

Our Vittatii started a bud last winter, which remained just above the bulb for a long while, and then decayed. This winter, the bulb was covered with small scarlet spots, which we find on the leaves of nearly all the bulbs we have. Are they made by a minute spider, or by too much dampness ?

We would like to learn the habits, situations, soil, and the sun and shade and temperature required. Do they bear *much variation* of temperature ? Do they require different soils and different treatment ?

We would like to get a white Amaryllis ; also a pink one. Where can they be had ? Our friends have seen them in bloom. We would willingly exchange a blooming bulb of Johnsonii or Vallotta purpurea for either. By the way, we have some forty young ones of the latter we would gladly give to any one wanting them—most of them quite small, however.

We have successfully bloomed a bulb we take to be Amaryllis longifolium. It had two stems, with 18 tube-like white flowers, with a maroon tinge at the base, on each. Some of the leaves were a yard and a half in length. We bought it of a German gardener, who had bought it of a Holland travelling agent, for a very rare lily, bearing scarlet and yellow flowers. We bought, lately, Amaryllis rosea and A. alba, but when received they resembled so much the A. longifolia, that we fear a second hoax. We paid $1.50 for the first, and 50 cents each for the A. rosea and A. alba.

Our A. longifolia was grown in a very large glazed pot, in the mixture of earth advised by Buist, viz.:—3 parts loam, 1 of woods earth, 1 of sand, and 1 of well rotted manure.

We have seen very large bulbs of Johnsonii, which were planted in powder kegs, and grown in a mixture (without regular proportions,) of loam, (clayey) woods earth, (sometimes scrapings from under a wood pile,) chicken manure, and sand. The flowers were frequently 7 inches in diameter, and the stems a yard high. They bloomed once a year, with one stem at a time. They were never dried off, and seldom repotted ; but were top-dressed once or twice a year.

They were in chamber windows, with a western exposure. The room was heated by hot air, from a sort of furnace stove in the room below ; but the temperature was, in severe weather, often down to near the freezing point. Do you think the wooden vessels, in which they were planted, kept the roots warmer ?

We fancy ours grow best in glazed pots. Ours bloom earlier than those described—often in January and February have two stems, with 4 flowers each. We also have had them 7 inches across, but only once or twice.

We use the mixture of earth advised by Buist. Rand says, use no woods earth, but loam, with one-sixth of sharp sand. A friend in Pennsylvania put hers out in the flower bed ; in the fall she potted it in the scrapings of earth under a wood pile. It had 3 stems at once, and 14 blossoms. Another lady had hers put out in summer. In the fall, the leaves were cut off, the bulb potted, and kept nearly dormant till spring. It was again put out in the bed,—it had 3 stems at a time, blooming once. Another lady here keeps hers in sand all winter, and puts them out in the flower bed in the spring, where they bloom. We have kept some small ones successfully in sand for two winters.

We fear we have made our queries too lengthy, but wish there were more who would take interest in these beautiful Lilies. We find even the gardeners confused in their descriptions of them. We heard an enticing description of some new ones imported by Feast & Sons, of this City. If as represented by the exquisitely colored drawing we saw, they must surpass any yet seen here.

[Our correspondent gives so much information, that it is too interesting for our minor department of queries. We give it therefore a prominent place here,—and will refer to the queries elsewhere.—ED.]

NEW METHOD of PRESERVING FRUIT.

BY J. S. HOUGHTON, PHILA.

Mr. Charles B. Rees, of this city, has perfected an apparatus for preserving fruit, by the aid of ice, which promises to be of great value to pomologists, and also to dealers in fruit. Mr. Rees has, for many years, been employed as superintendent of a large Ice Company, and was engaged, during the war, in packing meat and food for the Southern Atlantic fleet and Gulf Squadron ; during which time many experiments were tried, under the direction of scientific men, in the construction of ice-chambers.

Out of this experience was developed a method of cooling a fruit room, by the aid of ice, to a very low degree of temperature ; obtaining, at the same time, perfect *dryness* of the atmosphere, without any artificial absorbent or dryer. This is all done upon philosophical principles, by the aid of apparatus which removes every particle of moisture to such an extreme degree, that when the bare wet ice is fully exposed to the air of the fruit room, the doors will shrink as if exposed to hot air, and the floor becomes so dry that a match may be readily ignited by rubbing it upon the boards.

The apparatus requires no power to work it, and but little attention. That this invention is a perfectly practical one, is proved by the fact that more than a dozen Fruit and Meat Rooms of this description have been in successful operation for more than one year, in the market houses and principal fruit stores of Philadelphia; and they are, I believe, the only successful ones, of this character, in the country.

The principle of cooling and drying the air, invented by Mr. Rees, has also been applied to the brewing of ale, in hot weather, and to the packing and curing of pork in summer, with entire success. Two of the largest breweries in Philadelphia have their brewery rooms and ale-vaults cooled in this manner, with great satisfaction and advantage. One of these breweries is that of Collins & Massey, Tenth and Filbert Streets.

The apparatus can be applied to large or small rooms, or even closets and refrigerators, with equal ease and success ; and from the very nature of things,—as it is based upon the strictest natural laws,—it is the only plan that can produce a a perfectly dry atmosphere, without introducing fresh air into the chamber, or using an artificial absorbent.

Fruit in a state of moist decay, on being put into this fruit room, directly becomes dried to such a degree, that all the moisture upon the decaying spots disappears, and the spots themselves become covered with a dried pellicle, like court-plaster, and the rot ceases. The drying, however, is not such as to produce shrivelling in apples and pears, for the reason that only the external moisture is removed, and the interior flesh of the fruit remains unchanged.

In this connection, we may demonstrate the fallacy of the common idea, that fruit, just gathered from the tree, must undergo a process of *sweating* before it is fit to be put into the cellar or fruit room. The simple truth is, that fruit which has been *cooled* by any means, will always sweat when it is brought into a warm atmosphere; not because the juice passes out of it, but because the moisture in hot air always *condenses* on a cold surface. The process of sweating in apples may be repeated a hundred times, by cooling the fruit in a cellar, and then bringing it suddenly into a hot room.

Mr. Rees, the inventor of this new fruit room, proposes to superintend the construction of houses himself, and being a plain, practical man, is disposed to labor in this work for a very moderate compensation.

A card from Mr. Rees will be published in the advertising page of the *Monthly*.

A PROPOSITION.

BY JOSEPH AMRAM.

Friend Editor :

s ustomary with congregations to send their Pastors abroad, on pleasure trips, for the benefit of their health. Can't you get your parishioners to send you away ? I would like

to see you off for a while from your post—only on one condition though, which is, that I fill the seat while you are away. Will you go? I have often thought I was born for an Editor. I know I could manage a paper or magazine first-rate, and should very much like to try. When I look around and survey all the various Horticultural and Agricultural magazines, I wonder where they find readers with patience to read them. The *Gardener's Monthly* I consider the best of them—but pray pardon me, you know how plain I speak—it is not near what it ought to be; nor what I think I could make it, if you would only show me a chance. High as it is above all its contemporaries, it is usually half filled with rubbish, which ought not to be in it; while nice stuff, which would do credit to its pages, never appears. It is six years since I wrote an article for you. I left off disgusted. I determined to bestow my genius on other papers; but though I now return to my first love, I only do so through a sense of consideration on my part. I did think you would beseech me to come back. At least I thought you would write to know why my name appeared no more within the galaxy of your contributors. But I know all! Your pride would not let you! I now condescend to wound that pride. Will you let me be heard?

If *I will come to the point*, you say; well, here it is: If you want to go on a tour any where, I will manage your paper six months for you for nothing. What do you say? *A pretty fist I would make of it!* No, friend Editor, don't think so hard of me. I know I would revolutionize things; but the new order would be popular. For instance, I would at once abolish all the departments you have established, and just turn them inside out. Instead of *new or rare plants*, I would head the chapter, "Common old things," and here I know I shall have all the genuine plant lovers with me. Why not tell about the old *Primrose* and *Cowslips*, "Polyanthuses" we used to call them. Everybody knows, perhaps, that "everybody has these;" but everybody does not know that they thrive best in rich garden soil that is moderately shady; and above all, that they must be in soil which does not get dry or hot in summer. Another kink in their successful culture, is that they like a change of soil once in a while, because like the strawberry, they increase upwards; the lowest parts dying away after a few years, and the new roots come out from the last fall's formation of stem. So they must be either set down into the soil, or have a top dressing elevated up about them. But the transplanting is much the best thing. The change suits them, as it would you, and I could take your place for a while.

Now, also, everybody knows that there are many kinds of colors among these Polyanthuses; but everybody does not know that they can get all these colors for themselves by a very little management. That management is this. There are two kinds of flowers among them; one is called the "pin-eye," which has a pin-like centre, caused by the pistil protruding; the other, in old garden language, as I read in "Hogg's Treatise on Florist's Flowers," (an Editor, as I want to be, should be particular about references), is called "thrum-eyed." This has a closed orifice to the tube in the centre of the flower, and is caused by the anthers or male parts projecting up higher than in the other case.

Now, again, is a curiosity. The Pin-eyed and the Thrum-eyed Polyanthus both have the male and female organs perfect in each flower: both are Hermaphrodite—but the Pin-eyed flower is the only one that seeds; and this will not seed unless the Thrum-eyed one is grown closely in vicinity with it. The pistil in the Thrum-eyed one is perfect, but its own pollen has no effect on it; and the mouth being closed up by its own anthers, it cannot get the pollen from its neighbor flowers.

Now, thirdly, having arranged to get seed, it will be found ripe about July. Break it out of the seed vessel and prepare to sow at once. The best thing for this is a soap box, with holes bored in the bottom—fill with any rich garden earth—sow the seed on the surface, water well; put about one-eighth of old moss over the seeds, and set the box under a north wall, or under the shade of a hedge, or "anywhere" in just such a place. By September they will be tolerably nice plants, and they may be dibbled out about four or six inches apart in a very rich shady piece of ground, and covered with any material in winter which will keep them from being thrown out by the frost. Many will flower in the Spring and produce as much variety of color as a row of bottles in an Apothecary's shop. There is nothing gives so much pleasure as raising of these new things; and it is so simply and surely done in this way, that that is what I would tell the people if I were in the position you occupy.

Now what do you say? Will you give me a chance? Just as you please—you can take me, or leave me. I can go again into oblivion as I have been lately, or rise into a blaze of glorious usefulness. It makes little odds to me.

[We haven't the least doubt about our friend thinking he could edit a newspaper—everybody thinks that. As to our giving up to him for six months, we don't know. "Our parish" has not spoken to us about this treat; we will wait till it does.

We did'nt like this criticism at first, and once actually threw it in the rubbish basket; but remembering how one month we said, "better have our errors burnt out of us," than otherwise, "who knows," thought we, "but Joseph has acted on the hint." So we took it up and read it through, and made notes, and grinned a time or two, and commenced to criticize. "Ah!" thought we, "a fellow writing *the pleasure of new things*, complaining that we have heads for *new and rare plants*; a pretty consistent fellow for an Editor."

But while our back was momentarily turned, one who had been for some time loafing in our office, waiting for a chance to engage us to puff up his magnificent new tomato, accidentally used our notes for a cigar lighter; so we feel compelled to send the pages to the press just as they are, for our readers to form their own opinion, whether Joseph Amram would or would not be a fit Editor of this journal in our absence.—Ed.]

SHRINKAGE OF TREES IN WINTER.

BY A. FENDLER.

In response to a question asked of me in the February number of the *Gardener's Monthly*, page 46, if the splitting of trees in winter is not simply the effect of shrinkage, I wish to say that it is no difficult matter for an observing backwoodsman, who has lived during many a cold winter in the forests of our Northwestern and Western States, to tell whether the splitting of a tree is the effect of expansion going on in the interior of its trunk, or whether it is done by shrinkage of the trunk at its surface.

Wherever the splitting of green logs from *shrinkage* has come under my observation, I found the opening of the wood to commence simultaneously in many different places of the log's surface, to go on gradually without explosion, and to take place most effectually when the bark had previously been removed, or else had been loosened by decay. That in the trunks of living trees the operation of splitting proceeds in the same manner, I have no knowledge of; but I *do* know that in trees, the interior of which consists of a mass of partially decayed, more or less spongy wood, saturated with water, bursting of the tree in very cold winters is at times so powerful as to throw large splinters to a considerable distance by the freezing of the water contained in the interior of the tree.

If, as Mr. Huidekoper seems to think, there is no other cause from which a tree should split in cold weather but shrinkage, because the outside of a green log laid before the fire will split at the surface on account of the outside contracting faster than the interior, we cannot see how by mere shrinkage the bursting of a living tree can take place with such violence, energy and noise as may frequently be observed in extremely cold weather, and why this sudden bursting does not occur rather in the hot dry summer air, during droughts so severe that trees actually die from want of moisture.

If ever a tree splits from shrinkage on the outside, there will be a poor chance for its living afterwards; but trees bursting from freezing, as sometimes happens in northern latitudes, continue in pretty good health, which may prove that this kind of splitting was not caused by shrinkage of the outside.

THE FRUIT REGION OF GRAND TRAVERSE, MICH.

BY A. C. TUTTLE, GRAND TRAVERSE, MICH.

I dislike to write for your journal, as I am not versed in technicalities, nor have I the use of language to make an article pleasing; still I would like to remark a little upon this new fruit region, which is just developing. We are about five degrees north of Philadelphia, still we can raise any thing here without winter protection, that you can there. The Hybrid Perpetuals, and most of the Bourbon Roses, can be successfully grown here,—the Prairie Queen needs not to be taken down from its trellis.

We grow the Apricot and Nectarine; the finest of Plums, large crops, annually; Cherries are perfectly healthy, no gum exuding; Pears do remarkably well; Peaches are a sure crop, beautifully tinted in coloring; but Apples, this is the home of the apple, I never saw them equalled;

fair, high-colored and flavored, free from the black fungus which is so generally found upon apples grown in southern Michigan. Apples, grown here are remarkable for their keeping qualities. I have eaten perfect specimens of the Westfield Seek-no-further in July.

The E. Golden Russet will keep a year; we can place the Russet, Baldwin, and other good keepers in Chicago, and Buffalo markets, on the first of June, in perfect order.

This fruit region comprises the two peninsulas and the land bordering on, and under the influence of the Grand Traverse Bay, and Lake Michigan.

The inner peninsula, is admitted by all to be the best fruit point. The portion above the elbow has all the advantages of an island, wind from any direction passing over water, before reaching us; then the outer peninsula being much higher than this, the sharp winds from Lake Michigan are broken off from us in a great measure.

The Bay is very deep, 600 feet by Government survey, and sometimes does not freeze over—never till sometime in February. The influence of its waters prevents the damaging effects of early and late frosts; peaches are thereby sure, as far as injury from frosts is concerned. The ground is protected by snow, which generally lies on all winter, and the ground does not freeze. The average temperature, at 7 o'clock, A. M., for the months of December and January last, was 26° above zero. The warmest, 46° above; the lowest 2° above zero.

The soil is light sand mixed with lime, with a clay sub-soil. Some places the surface soil is mixed with clay. All the gravel and stone are lime. All kinds of root crops grow enormously, and of good quality. The best winter wheat I ever saw grew here; often realize 30 bushels per acre. This is emphatically a timber country; mostly birch and maple, with tall straight trunks, 70 and 80 feet to the limbs.

Occasionally a basswood, an elm, an ash, and an enormous hemlock; and near the beach we find the American Arborvitæ, the Balsam Fir, and the White Pine.

Our markets will chiefly be Chicago and Milwaukie, same as at St. Josephs, Mich. With water transportation, our peninsula being narrow, there need be very little land transportation; this item of itself is, I think, next in importance to the fact of raising the fruit. The largest boats of the Lakes can float at our docks.

I think our protection by water from frosts, gives us a decided advantage over St. Josephs, as there, three full crops in five, is remarkable. If the wind should blow from the land, during the late, cold nights of spring, at St. Josephs the peach crop is destroyed. Here we know of nothing of the kind.

Those looking for fruit locations, I think, would find it to their advantage to look at this point before purchasing. I have not a foot of land for sale, consequently *no axe to grind.*

ESSAY UPON ANNUAL FLOWERS.

BY WALTER ELDER.

Read before the Pennsylvania Horticultural Society, March 2, 1869.

Annuals are more generally grown than the other classes of flowers. The species and varieties, in numbers, are now so multitudinous, with habits and natures so various; they are adapted for all climes, soils and modes of culture, and every purpose of ornamentation, and bloom the year the seeds are sown. By an all-wise ordination, the various genera bloom at different times, and follow each other in regular progression, with a rich display of flowers and sweet scents from the opening of spring to the closing of autumn. It would require a large volume to expatiate on their beauties; suffice to say, they adorn alike the yard of the cot and the garden of the palace; even the unimproved species are admired at the dwellings of the poor, though growing in a state of confusion. How much more the new varieties in the neatly framed and nicely kept parterres of the tasteful and wealthy, under the culture of the anxious amateur and skillful gardener.

The extraordinary improvements the new varieties show over their original species, far surpass the fondest anticipations and keenest conceptions of man. From species of single corolla, or one row of petals, with colors uncomely and dim, varieties have been produced with flowers as double as Dahlia and rose, of colors, and mixtures of colors of the most dazzling brilliance. Observe the difference between the single *Queen Margarets*, and their progeny the double *German Asters;* or to bring the case more to ourselves, compare the single *Lady Slipper*, growing wild at our road-sides, with its offspring, the double *Balsam*, which gilds the royal and public gardens around *Paris* with great splendor, where it is tilled. "Fleur de la Reine Marguerite," in *Edinburg* it is grown by thousands in glasshouses, and when in bloom in eight inch pots, it sells for a half a crown (60 cents), apiece. I for three consecutive years grew and sold it there by thousands annually, and never had one left to bear seeds.

Some annuals are dwarf creepers; some are stately and erect, others are climbing vines that ornament lattice works with foliage and florescence all the growing season; some are admired for profusion of blossom; some for peculiar habits, and others for their sweet odors.

Anagallis grows two inches high; Sunflower is ten feet tall; Gourds climb fifty feet high; Convolvulus gives glory to the mornings; Mirabilis imparts delight to the evenings, and both convolve their blooms during the heat of the day. Others bloom only in the hot sunshine; some bloom only in the spring, others in the cool of autumn. It is a remarkable fact, that no genus produces both *blue* and *yellow* blooms. Larkspur, Nigella, Convolvulus and Maurandia dress largely in blue, but never wear yellow. Calliopsis, Eschscholtzia, Marigold and Sunflower are profuse in yellow, but barren of blue. In all the works of creation the hand of omnipotence is visible; who can doubt the existence and omnipresence of an Almighty Ruler?

There are different times and modes in sowing the various species, yet all seeds are put a depth in the ground in accordance with their sizes; for example, Lupin and Sweet Pea seeds are put an inch deep. Poppy and Portulacca are only under the surface. For all kinds the soil should be rich and finely dug; where manure is scarce use the concentrated fertilizers liberally, they both enrich the soil and destroy insects lodging in it, and an abundant bloom follows their application. I commend *Harrison's Plant Fertilizer, Poudrette, Peruvian Guano, Flour of Bone* and *Super Phosphate*, when honestly compounded.

Class 1.—Calliopsis, China Pink, Eschscholtzia, Rocket Larkspur, Silene, Pansy, &c., bloom earlier and more profuse if sown in the autumn.

Class 2.—Anagallies, Alyssum, Candytuft, Groves Love, Drummond Phlox, Mignonette, Portulacca and other dwarfs are sowed in patches.

Class 3.—Branching Larkspur, Nigella, Gillia, Collinsia, Sweet Peas, Poppies, and such of upright growth are sowed in round rings a foot in diameter.

Class 4.—Centaurea, Aster, Gaillardia, Marvel of Peru, Prince Feather, Love lies bleeding, &c., are sowed in rows in a warm border, and when the plants are large enough, they are transplanted single to where they are to bloom.

Class 5.—Antirrhinum, Balsam, Browallia, Ageratum, Cockscomb, Globe Amaranthus, Gilliflower, Pansy, China Pink, Sensitive Plant, Ice Plant, Zinnia, Maurandia, Thunbergia, Tropœolum, &c. are sowed in cold frames with glass sashes, and kept very warm until the plants get four leaves, and when large enough and weather warm, they are planted out, all singly, except Maurandia, Thunbergia and Tropœolum, they should be moved in bunches with a trowel.

Class 6.—Convolvulus major, Cypress vine, Common Nasturtium, Hyacinth Bean, Scarlet runner Bean and Gourds are planted where they are to grow up and bloom—they are all climbing vines. Every species and variety should be labeled when sown, and those needing supports should have stakes or frames stuck in beside them, to tie them to as they progress in growth, and they show their blooms better.

[There are large factories for making labels of wood and fancy frames of galvanized wire, and, also, lattice works for supports for flowers; they are of many sizes and forms, and very ornamental; and are for sale in the seed stores, they add elegance to the beauties of flowers.]

The beauties of Parterres are greatly enhanced by judicious arrangements of the sizes and habits of the plants, and the nice blending of the colors of their blooms to make a pleasing contrast, and in mixing well those of sweet perfumes with the more showy in a way that beauty and fragrance will be well united in all the different parts of the flower gardens.

Inexperienced lovers of flowers would be benefitted and grow them more plentifully if the seed catalogues were dotted with abbreviations of the habits of plants, the heights they grow, their times of blooming and the colors of their flowers; and if to be transplanted, and whether Annuals, Biennials or Perennials. Some Biennials bloom the year they are sown, Antirrhinum, China Pink, Gillyflowers, &c., for example, they may be classed with both Annuals and Biennials. Some of our seedsmen are commendable in having abbreviations, but they do not go quite far enough; the "Hortus Britannicus" mode should be fully followed out.

We cannot too highly applaud the laudable enterprises and intellectual endowments which

our younger class of seedsmen and florists have brought into play to promote their business and inspire a more general love for gardening, by the glowing descriptions and fine illustrations of new products they give in their yearly catalogues; by that all the different departments have been raised to higher standards, and a more lively animation has been infused into our body Horticultural, which, I fain hope, in a few years hence, will excell that of every other nation in the universe.

All hail to you, young friends, a glorious and grateful future awaits to crown you all with glory.

PURSH'S JOURNAL.

(*Continued.*)

July 13. My anxiety of seeing a letter from Dr. Barton was so great, that I thought it would be best to call on Squire Geddes to-day, and see whether there was not one in his hands. He lives about 6. m from the Hollow, northwest; I set out for it, near Onondaga Court house. I observed plenty of Cynoglossum officinale, calld Tory weed & Myosotis lappula, which is every where common along the streets. Verbascum Thapsus common on the waste grounds, & V. Blattaria flore albo is here and there to be seen about Onondaga. Epilobium parviflorum with red & white flowers among the Sonchus Canadensis, which covers all clear spots in the woods: the Sonchus is the same as they call to the south Richweed, Milkweed & Butterweed. Cornus scabrosa? & fastigiata? Silphium laciniatum—not yet in flower.—Verbena urticifolia—V. hastata —Triosteum perfoliatum, Asclepias multium,—bellata P. the same as I calld so last year from the Peaked mountain—A. umbellis pluribus nutantes laxifloribus, longe pedunculatis; calyx laciniis acutissimis; petalis reflexis calyceduplo longior, ovato oblongis, virescentes extus purpurascens: columna nectarifera basi purpurea, nectaria ovoidea alba, crassa, corniculis longis, convergentibus.—Asclepias syriaca is common about here.—I likewise observed a plant which only seems to be common to limestone land & which I had observed last year throughout the great valley of Virginia frequent, but never had a chance then to see its flowers and seeds: it is the one which I have calld in Dr B. collection' but suppose wrongly, Lithospermum latifol. of Michaux: this plant is as I then supposed a Cynoglossum & I calld it in my journal last year C. parviflorum, which name I shall use for it in the future—Cynoglossum corollis pallide cœruleis calyce subaequantes urceolatis fauce callis clausa: antheris intra tubum corollæ, nigricantes. In fact I see no difference in the parts of fructification among this species, the Cynoglossum officinale & the plant which I take to be Myosotis Lappula.—The seeds of these three plants are very much alike in structure likewise, for which reason I think, the Myosotis Lappula to be a Cynoglossum too.—Near Mr Geddes I found the Blsttum virgatum in fruit, & in his mill dam a monstrous thick cover of Chara fragilis, which emitted a most horrid smell, the Dam being broke & dry, & the whole of this Chara turn'd to the sun, & changed its green colour, which it has, when under water, to a clear white; at my first coming to the creek I thought the bottom of the pond or dam was a kind of marle by its colour; but getting down to it, I found it to be the Chara which had covered the bottom all over.

Mr Geddes was not at home & would not return untill next day: Mrs Geddes however told me, that if any letter of the kind I expected had been come to her husband's hands, she should have heart something about it; but she had not I therefore returned towards the Hollow again. I observed plenty of Chenopodium anthelminticum along the roadsides, which is very common about here; Potentilla hirta or Norwegica—Geum floribus albis parvis & the Thalictrum dioicum mas & femina in full flower.

14. This day I visited Capt Webster, he lives about 3. m. south of the hollow: I found him to be a plain friendly man, he was to bussy occupied in his work else he would, as he said, take a walk with me through the woods: but if I would come & see him again, he would go with me to the Indian village which I was anxious to see: I enquired about the Indian dog: but he told me that not one genuine one was to be found among those Indians any more, having degenerated by mixing with others to such a degree that hardyly the traces could be seen in them. The Hydrastis canadensis grows in great abundance in the woods here, they call it Curcume: Sanicula Marylandica, Geum flore albo.—Polymnia canadensis—Elymus canadensis—Potentilla Norwegica—Asclepias tuberosa—Galium circæzans &c were in flower:—The Caulophyllum thalictroides grows in abundance in these woods, it is called here Cohosh. Capt. Webster

informed me, that there was one sort of Cohosh growing here with red berries, which I suppose to be the Actea spicata: I dit not see any: The Botrypus virginica, which is plenty here is used by the Indians as a principal remedy in the venereal disease. On my return to the hollow I observed Cornus alternifolia, which is calld Green Osier. the other species of Cornus whose branches are always speckled, & which I suppose to be the sort with white berries grows plenty in the woods hereabouts.

15.—As I had to get my boots mented I kept the house all day & wrote a letter to Dr B having as yet heart nothing from him. In the evening I took a walk to a store to get some paper. In going alongOnondaga creek I observed a species of Potomogeton which I suppose either the marinum or graminifol. I describe it Potomogeton ramis dichotomis, foliis longis, crasis gramineis superioribus vaginantes. cum ligula longa membranacea spica pedunculata, antheræ 4. crassa, subsessiles 2 loculares foliolis calycis opposita, alba, stylis 4. stigmata peltata atrorubra. This species abounds hereabouts very much.

16. This day I set out to have a thorough examination of the Salt marshes on Salt point: In going through the swamps between the Hollow & the Point, I observed the Mimulus alatus in great plenty; Ranunculus aquatilis in flower, on the branches of the creek: at the point I went along a Causeway made through the marsh & occasonally in the marsh itself, whenever I could get to it; but this season having been so much rain, makes it almost impossible to get in, last year I was informed one might have went every where through it without much trouble, the season having been so very dry. Cephalanthus occidentalis & Osmunda regalis, fill up a great part of the swamp where any bushes grow, Utricularia minor I found but only one specimen in flower. Potomogeton gramineum, Lemna arrhiza & polyrrhiza, Triglochin maritimum calyx 3 phyllus, antheræ 3. calycis foliolis opposita & briviora, sessiles, squamis 3. basi genminis inserte eoque adpressa. germen longum 3 gonum, stigma barbatum.—Ipomœa rosea foliis hastatis: Vicia Cracca & Lathyrus ?—Xanthium spinosum? Campanula erinoides, Veronica scutellata, Alisma Plantago, Sagittaria sagittifolia? Gabius Molugo & Galium foliis quaternis linearibus —Hibiscus palustris, putting forth his flowers. Polygonum amphibium—Juncus & Scirpus lacustris, Galium 3. fidum a very small leaved species & truely 3 fid & triandrous.—Ranunculus a very small creeping sort, in the salt marsh with leaves like Chrysospplenium I calld it R. stoloniferus; it grows in thick tuffts together, & covers the ground. Asclepias syriaca & purpurascens?— Scutellaria galericulata—Lysimachia racemosa,-Glycine apios, without flowers. Apoycnum cannabium—which is used by the Indians as a purifyer of the blood. Sparganium ramosum— Arundo—Panicum— Scirpus &c. Eupatorium perfoliatum & maculatum—A grass which I suppose to be a species of Trachynotia of Michaux. This is a grass I never seen before. A species of Sium fills up a great part of the marsh it appears the same as I observed at Cayta creek & calld S. heterophyllum.—Sisymbrium amphibium very frequent.—Lysimachia racemosa, this appears to be the same as the bulbifera; I dit not find one single specimen with bulbs here, though I purposely searched for it, may be they are different after all? ? A species of Rosa growing pretty tall grows in the most wet places, among Sparganium and Typha, which appeared very strange to me, it is in great abundance through the swamps. A Rumex, which for want of a name I call R. Polygonoides is very plenty in the marsh. A plant unknown to me I found near the Salt works in the marsh amongst Iris & Scirpus with a long broad radical leaf like a beet & the stem some what like Lythrum verticillatum, no flowers to be seen. Having myself sufficiently satisfied for this day in this very disagreeable & stinking marsh the day besides being very hot, I took some refreshments, & went towards my lodging at the Hollow again.

In my return through the swamps I observed Pyrola rotundifolia—Epilobium angustifolium, beginning to flower—Aster conyzoides—Chara—Monarda coccinea & beautifull plants of Lilium superbum.—In going to the point this morning I observed a Geranium in foliage like the C. carolinianum, but with considerable large red flowers: I took but a small sprig of it, intending to collect some on my return, but I could not find the plant again.

17. This day I was bussy of drying & butting by the plants collected yesterday. I received a letter from Dr B .. including 20 dollars, which I was very much in want of.

18. Having promised, this day to see Capt Webster I set out for his place: We took a walk to the Castle or Indian Village: this tribe is but very weak, they are very genteel & well behaved people & industry beginns to propagate among them: they have some very good fields of corn

which they keep in good order. My object was for a great part, of learning the name of some herbs in their language: but Capt. Webster told me he knew the name of most trees himself & some of the more noted plants, which he could give me by & by. Phryma leptostachia grows very tall & large here:—Polygonum aviculare the variety with upright stem & large leaves. Cicuta maculata grows in great abundance throughout Onondaga: the Indians use it to poison themselves, when they have an inclination in going out of this world; it is a most powerfull poison, as Capt Webster tells me who has seen the case on some Indians which had eaten the root, & was lost without being able to get anything as a remedy against it, it occasions Lockyaw & the patient is soon done. Elder bark or a Muskrat skin choppd fine, with the hair on is reckoned a remedy if soon applyed to. Buthalmium helianthoides in full bloom—Hedysarum acuminatum & a species of Lespedeza without flowers—Circæa alpina? Triosteum majus--Nephrodium dentatum—Asplenium salicifolium & polypodoides, P—the former I could not find with fructifications.—On my return I observed the same plant which puzzled me so much last year: and which I took then to be a species of Batschia. It happened as then that I came too late for seeing its flowers, but foliage & seeds indicate it, to be very nearly related to it: after diligent search I found one small flower on the top of a young shoot remaining, which I carefully examined & found the following character Batschia parviflora P.—corallis pallide luteis, tubus calyce subæquante, limbus subclausus, callosus: staminibus inclusis. The Cynoglossum parviflorum in plenty.—this night Sqr. Geddes calld on my lodging, having returned from his yourney & hearing at the post office, a stranger having enquired for him. I promised to be at his place in a day or two.

July 19 Rested myself & wrote &c.

EDITORIAL.

PILEA MUSCOSA.

One of the great attractions of gardening is, the insight which it affords its followers of the workings of nature. The mere color of gay petals, the graceful forms of foliage, or the beauty of masses of flowers in the garden, allow of much pleasure in their way,—but nothing compared to that which is given to the curious souls who penetrate deeper into nature's hidden mysteries.

There is in very common cultivation, and used very much for hanging baskets and shady places where other things will not do well, a small-leaved, somewhat succulent plant, which is known to florists as *Tillœa* muscosa. It is chiefly valued because it is rather graceful as compared with Begonias and other *fat* things; and because it is so accommodating in its requirements of growth. Some little interest also attaches to it, when the owner remarks to the visitor, that it "has the smallest perfect flower that blooms."

Now, there are a good many matters of interest about this common little plant which might make it still more interesting to those who already admire it. In the first place, its usual name is not the right one. It is a *Pilea*, not a Tillœa. The last is a little, minute plant, of the house-leek family. *This* one belongs to the *nettle tribe*. Almost all of this class are not very friendly in their disposition. They are clothed with hairs, containing little bags of acrid juice, which burst when even lightly touched, and give as much pain as the bite of a musquito. Almost every English boy has made this unfavorable acquaintance with the *stinging nettles*,—and probably many Americans, as this plant is now naturalized in many parts of the United States.

Some of the stings of the West Indian species are particularly bad. We have seen one, a *Jatropha*, sting a man's hand so bad that he was unable to use it for weeks. This little fellow is quite harmless,—and thus, as in the virtues of many good people, possesses a sort of negative goodness. In the arts, plants of the Nettle family have their use, in the tenacity of their fibres; yielding material for ropes and textile fabrics.

The little Pilea has a great interest in the new discoveries of Darwin, in reference to the cross-fertilization of plants. The theory now is not as it once was. Formerly, people thought they could see a wonderful arrangement in the plant to impregnate itself. In the Fuchsia, for instance, where the pistil is so much longer than the stamens, it would be said that the flower hung down in order that the pollen might fall on the pistil. But now, since Darwin's papers have appeared, it is known that these instances are the exceptions—that the plant, apparently, has a great horror of breeding in-and-in, and that it usually makes every effort to avoid self-impregnation.

Now, plants of the Nettle family have long been known to throw open their flowers with a sudden elasticity; and it is very curious and interesting to watch the process. In the *stinging* Nettles, however, it is no pleasant pastime. Our little friend, the Pilea, which has no stings, gives us a good chance to watch the process. With a good lens, on a fine, sunny day, at this season, one can amuse little children, as well as instruct children of a larger growth, by watching the opening process. There are thousands of little pin head like buds on the plant. Watch for one which has a faint streak of white across its rosy head, and at once apply the lens. In a few seconds, it will be found to partially open its four cleft fold, and, in an instant, its four long stamens spring out, and throw the pollen out a long way.

The force possessed by these minute organs must be tremendous. On one occasion, we saw, in the sunlight, a streak of pollen, like a little puff of steam, eighteen inches from the stamen, seemingly at the same instant that it had been ejected from the pollen cells; and so strong was this force that, apparently, every particle of pollen had been thrown out in the effort.

One may have some idea of this tremendous force, by comparing these little flowers, so small, with that of a tulip or magnolia. If they possessed force in the same proportion, they could throw their pollen *hundreds of yards*.

Why does this little plant take all this trouble? Why throw its pollen away so clean, that not a particle falls on its own flower? The answer is, that it is dicœcious, or belongs to that family of plants, which has male or female flowers on different plants. Our cultivated plant is the male form, and it throws its pollen away from its own structure, where it can be of no possible use, in order to meet the chance of its pistillate affinity elsewhere.

The stamens themselves afford an interesting study. Folded in the flower, they have apparently two joints, forming three plaits or laps. These, in springing open, present a thoroughly straightened out appearance on the instant, and become at once rigid, and will not bend back again as they were the moment before without breaking!

It is just such little things as these which give more than usual interest to a garden. They serve to beguile many a weary hour,—and not killing time merely, but giving one a little insight into the wonderful workings of this wonderful world.

CALADIUMS AS BEDDING PLANTS.

It is very common, both in our horticulture and agriculture, to continually bemoan our misfortunes in not being able to have things as we see them in the mother country. We have brought our language, our traditions, our general education, from Europe; and we are too prone to want to see everything repeated here as they exist there.

Though rejoicing in our escape from bondage, we yet feel an occasional hankering after the onions, the cucumbers, and the flesh-pots of Egypt. But around us are beauties the old world never dreamed of—facilities for striking out new paths in art and science, which our transatlantic friends would seize with avidity, and which are all lying loose, waiting for some original mind to gather them together into multitudes of useful things.

In our flower garden decorations, particularly, we are much at fault. In the moist and cool climate of Britain, they have, by generations of experience, found out exactly what will suit them. We have rather copied from them, and our very arid climate gives us little success with the same plants. We have rather to look for our decorative plants from the tropical regions; and there are, at this time, scores of plants tenderly nurtured in stoves and hot houses, which only one person in a thousand ever gets the chance to see, waiting to be turned into common florists' plants, serving their turn to bring pleasure to the homes of millions.

Little by little, we are learning this. Once in a while, some one, deserving the honor of being classed as a public benefactor, adds to our light. Worthy of this distinction is, certainly, Messrs Pennock, whose beautiful advertisement of *Caladiums*, as bedding plants, is deserving of all praise.

Every one will remember how very recently it has been that the Caladium was supposed to require one of the most expensive houses to grow it in. That beautiful house, erected especially

for the *Victoria regia*, some years ago, by Mr. Caleb Cope,—which those of us who had the good fortune to see, will never forget—did not seem complete without the numerous bi-colored Caladiums which were studded around on every side. Now, to know that we can have all these beautiful things to grow in our gardens and grounds, as easily as Indian Corn, is certainly a great triumph for American gardening.

Messrs. Pennock also deserve great credit for another new feature introduced now for the first time, namely: the giving of colored drawings of the plants he advertises in the magazines. So far as catalogues are concerned, this is, indeed, no novelty; for Hovey, Washburn, Dreer, Vick, and some others of our advertisers, have already occupied the field—but in this more public plan, Messrs. Pennock lead the way. They have been at great expense to do it; but, believing heartily, as we do, that Caladiums will become popular bedding plants, Messrs. P. could not have taken a better plan to make their beauties known; which, after all, is the source of genuine profit in advertising.

PHILOSOPHY OF DIGGING.

When one wishes to pour a full measure of stupidity on some luckless laborer, he is often told "he is only fit to handle a spade." Now, it is very rare to see a man who can handle a spade in the true, professional sense of one who feels a pride in his work. Perhaps, after all, this is not to be wondered at; for in every profession—gardener, lawyer, physician, or "digger,"—not ten per cent. really know their business, or care for their business beyond the amount of the fee or wages they are to get for so many hours' work; and, usually in such cases, the amount paid is in inverse ratio to the amount of real good accomplished.

These thoughts pass through our mind while reading a paragraph in a recent issue of *Hearth and Home*. In our notice of it, we gently criticised its *triangular vegetable plots*, on the ground that no gardener or farmer could either dig or plough them. Criticism of the *Hearth and Home* was rather distasteful to us. It is just the very thing that is wanted. A real first-class paper of intelligence, destined, as we hope, to carry a love of rural life into hearths and homes where, now, no horticultural influences enter. Its "high tone," also, is not of the counterfeit order, but has the genuine ring.

But *that* vegetable garden did excite much mirth amongst practical men. We barely hinted at it, supposing this would be enough for our friends to see their error. Judge of our surprise to find them *defending* it. That plan, it tells us, not only looks well on paper, but is actually in practice; and the gardener finds no unsurmountable difficulty in working it. We guess not. As we have said there are ninety per cent. in every profession who never find any "unsurmountable obstacles." They are as ready to lay out grounds, grow orchids, force grapes, or propagate New Holland plants, as to dig ground or milk cows. There is no "unsurmountable obstacle" any where to them. Any office in this Republic, from Policeman up to President, or Ambassador to England or Hayti, they feel themselves entirely competent to fill.

We will venture a great deal that this intelligent gardener, who finds no obstacle in digging a triangle, is just one of these brave fellows, whose pluck is certainly praiseworthy, even though their work ends in the mole hill.

We have seen some of these little Davids working at a triangle. As the earth gathers in the corners, as it must, they lay down the spade and take to the rake, and pull back into the trench the accumulating earth, which otherwise would, in time, leave a chasm large enough to bury all the dead horses from a moderate-sized battlefield. These old fellows have mostly "larned their bis'ness." For the benefit of younger men, however, we thought a few hints on digging would not be out of place.

The first thought is, how to do the most and best work with the least amount of bodily labor; and to this end the first thing is to form or strike out a plot at right angles,—a square or parallelogram. Let the following letters represent the plot to be dug:

a *b* *c*

d *f*

g *h* *i*

With a garden line, divide the lot into two equal parts, from *b* to *h*; then dig out all the soil two spades wide, from *a* to *b*, throwing it on to the space between *b* and *c*. Then continue digging down between *a* and *b* to *g* and *h*, where

will be a trench the size of the one thrown out at top. This trench is filled in with earth from a new trench between *h* and *i*, and that part is then dug back to *b* and c, where the earth from *a* to *b* is ready to finish the job. If the plot to be dug is very wide, three or more of these divisions may be made.

So far, all this is done to keep the ground level without any digging, raking or wheeling. For every square foot of soil thrown out, there is exactly the square foot left to throw in. This is the theory and practice of scientific digging. Nothing but a right angle will admit of this.

We have said, throw out a trench two spades,—technically, two *spits*,—wide. This will give a wide trench, without which it is impossible to bury weeds well, or properly turn the bottom soil up,—which is essential to good digging. The width of the spit depends on the hardness of the soil. It should be no wider than will permit of the spade being sent down the full length of the tread, at *one thrust* of the foot. If two or more thrusts are spent on one spadeful, digging soon becomes very hard work. About three to four inches is usually quite enough.

Generally, the eye of the handle is in the left hand, the right near the blade. In lifting, the nearer the blade the right hand is kept, the easier the spit is handled. As soon as the spit is thrown out, the right hand is slid up to near the left, where it remains while the foot is treading it in for another operation. If the earth is very hard, the spade is lifted by the left hand and thrown down perpendicularly before the foot is added to give the thrust. On penetrating the earth after this throwing down, the handle is drawn towards the digger. This opens the spit, and the foot then added makes it very easy work. Some diggers, used to this mode, prefer to work in hard ground, and will actually do more, with less fatigue, than a greenhorn will in light earth.

In digging with the left hand on the eye of the handle, the digger commences at the left hand of the plat, and moves to the right, always careful to dig as straight a line as a good farmer would a straight furrow. In throwing the soil from the spade, however, it is turned from right to left, and and a very dexterous twist is necessary to turn it easily, and exactly upside down. But this is soon learned by practice.

As soon as the spit is turned, one or two thrusts of the large blade is given to break it through, and another side stroke with the corner of the spade, strikes it on the surface, and makes it exactly level with all that has been dug before. A good digger rarely gives more than two cuts to break the spit, and one blow with the corner to level and pulverize it.

Our directions have been given spade in hand; but the four-tined digging fork, we have so persistently advocated, is now in almost general use—and by it, three times the work can be done, with more ease, than with the spade.

We havenow given the philosophy of digging—one of the easiest, prettiest and most interesting operations of gardening, when well understood. The writer used to take as much pleasure in it, when a boy, as in town ball, cricket, or pugilistic encounters; in all of which he was accounted, by other boys, "some." And, even now, grey-haired, old and tottering,—as, after thirty years of hard pen labor, most of his distant friends think he ought to be,—he never sees an awkward digger, without feeling an almost irresistible impulse to offer himself as a challenge spademan, to add, with the prize hogs, to the attractions of some country fair.

SCRAPS AND QUERIES.

PASTEUR'S DISCOVERIES IN WINES.—*W. K. Newton, Mass.*, writes: "A few months ago I read some account of what was deemed an important discovery of a Frenchman, Mr. Pasteur, of a mode of preserving Wine by heating to a certain degree; but particulars I could not learn from the articles. 1st. The degree of heat, and 2nd., how long the heat was to be continued, and 3rd, and most important of all, whether the heat was given *before fermentation or after*. I presume, however, not till after fermentation, and the wines become clear. Nor can I yet find out all these particulars. I learn by letter from Capt. Anderson, to whom I wrote since, as the proprietor of Longworth's Wine factories, and after I had seen the printed account, in some of our Journals of that establishment. I desired him to inform me of all particulars,—as I had read that a large part of the "Still Wines" of that establishment were preserved by

Pasteur's French mode, (or La Pasteur.) That it was preparing, and thus now and there on a large scale, if not extensively, and in rooms prepared by heating. I also learned that the Wine thus prepared and in bottles deposited *no sediment;* while Wines (Still Wines) as prepared by ordinary modes, deposited a sediment when bottled.

Capt. Anderson politely answered my letter, that the heat required by La Pasteur's process, "60° Centigrade," equal to "140° Fahrenheit." But in what stage of the Wine the heat was to be applied, or how long to be continued, he did not state, but referred me to "*Smidt's Wine Reporter*, published in New York. I since have written to Mr. Smidt, Editor of the *Wine Reporter*, New York, about three month ago, but got no answer. Prof. Gamgee (English), in his lecture lately delivered on Boston, on preserving meat by a new mode, fresh as at first all summer by sulphur, etc., respectfully names Pasteur and others as having made new and important discoveries, by the aid of heat, etc., but he gives no other light on Pasteur's mode.

By the way Capt. Anderson informed me that to convert Fahrenheit degrees into the equivalent of Centigrade, we must first deduct 32 from Fahrenheit and then multiply by 5 and divide by 9; thus you see 140° Fahrenheit, is equal 60° Centigrade. I deem the process of Pasteur's very important, and I think you will do a very great public service by searching it out and publishing it in your excellent magazine, and thus oblige many, and render great service to the country."

[Before noticing Pasteur's discovery, it is proper to observe, that *after* fermentation the seeds of a minute fungus, a species of *mycoderma* are generated, which afterwards germinate and grow in the wine, and which has a tendency to acidulate it. Pasteur's discovery is no more than this, that heat will destroy these germs without injuring the wine. 140° was Pasteur's original temperature, but he has since discovered that for fine wines, 120° Fahr., is sufficient. We judge that the temperature may vary from 120° to 140°, without any injury. A few minutes at that temperature is sufficient to destroy the germs.]

Weather in Florida—*A correspondent at Hibernia, March 10th*, says:—"While you have been enjoying a mild winter, we have had a very cold and wet one for this district. Last week at Enterprise, 150 miles south of this port, there was ice on two mornings. I heard of its freezing at Lake Harney, a considerable distance further south. The freezing weather at New Years destroyed almost all the oranges on this river, to the great loss of the owners of orchards; and I fear the last freeze has settled the matter for the next year's crop, as the blossoms have been well formed and some were fully developed for a week or two past, and a very large number of them are now evidently destroyed.

Yet notwithstanding the backwardness of the season, we have had many plants in bloom, and others are coming on. The wild plum, the beautiful yellow jessamine, and other of the earlier blooming shrubs are now out of flower; the Dogwood, Halesias and wild Honeysuckle (Azalea) are just coming out, and the thorn bushes are budding. Even without the flowers there is much to please. Close by the house here is an Oleander some 25 ft., in height, and measuring in diameter, one way, 28 ft., and the other 31 ft.

Just think of a specimen of this plant 90 ft., in circumference. Not far off is a Live Oak having a trunk about 4 feet in diameter, whose branches extend about 45 ft. on every side. Nothing can be more beautiful than the "river walk" here, which extends along the shore for three-quarters of a mile, shaded by fine live and water oaks, pines, etc., and set off by beautiful clumps of holly, palmetto and other shrubs. How I wish you could see it."

Transplanting Trees.—A *Louisville, (Ky.)* correspondent sends us a slip from the *New York Observer*, arguing on the great importance of the tap root. Our correspondent asks our opinion. In answer to another correspondent, we have already said what we think of this tap root question. The *Observer* says:

"Hundreds of fruit growers have learned, at a costly rate, that when the tap root is severed, we interfere with the *habit* of the growing plant or tree. Thousands upon thousands of fruit trees of all kinds, grape vines, expensive evergreen trees, and particularly nut-bearing trees, have been transplanted after the tap root was severed, have lived and grown a trifle each year, for a few years, and then appeared to be affected with some disease, which prevented the usual luxuriance and productiveness. The tap root was gone. If the root were not essential to the thrift and life of a tree, nature would not have made that tree or vine to send down such a root.

Practical fruit growers are waking up to the importance of this subject, and purchasers are beginning to see their error. Many of our agricultural editors, who once relied upon interested persons, when they said, "let the tap root be cut off," now take sides with the backwoodsman, who contends that the tap-root is essential to the life and health of the tree, as it goes down deep into the earth to supply the growing stem with moisture and mineral matter during the dry season of the year, when the *lateral* roots cannot find half so much moisture as escapes from the leaves. Therefore, every tap root should be retained as perfect as practicable, and be encouraged to grow. A large hole should be made with a crowbar, several feet deep, where the tree or vine is to stand, and a lateral root, (when there is no tap-root,) should be encouraged to grow in the hole."

It may be a sufficient answer to this, perhaps, to say that, if "agricultural editors" would rely on their own knowledge and experience, instead of the "knowledge of interested persons," or any other persons, they would find that many "fruit" and "evergreens," "grape vines," and so forth, *have no tap roots*. We begin to think that some who are arguing about this, do not even know what tap-roots are.

How Can we Help it?—Under this head Mr. Chas. Arnold (see page 102) asks how to stop counterfeits of genuine fruits. The plans proposed are very good, so far as they go, but would not begin to check the evil. The best thing we know is to *encourage every one to read the papers*. And here let us speak a truth we have never liked to tell before, namely: as a rule, those most opposed to the spread of horticultural magazines *are nursery and seedsmen*.

Nothing astonished us more, in our first year's connection with this magazine, than to find that with perhaps a dozen noble exceptions, the whole of this class did no more than send their own subscriptions. They—each one—would not be without it for the world; but each acted as if it was only for him—not fit for his neighbor to read. We will guarantee that one may travel from Labrador to the Equator—from Philadelphia to the Rocky Mountains, and not find a score of seed-stores or nursery offices, where a customer may see *any one of the three horticultural journals*, although horticultural *books* are always on hand.

We have even had letters from nurserymen and seedsmen, stopping their subscriptions, on the ground that our journal was teaching the people too much.

We are not scolding about this. Every one must be the best judge of his own business. But the naked truth is as we tell it. If our friends think it is not to their profit for every one to read the papers, "How can we help it?" remains a mystery to us. If all would read the *Monthly*, the trouble would cease.

Retention of Leaves in Winter—*J A., Grand Traverse, Mich.*, asks: "why is it in some oaks and apples, the leaves will be retained all winter, while with most they drop in the fall?"

[As we do not know that the explanation has ever been given in any work or article on leaves, we will try to make the matter clear.

At the place where the leaf separates from the stem is the *articulation* or joint. When in the fall vitality ceases in the leaf, it does so down to the joint. Vitality continues of course in the part below the articulation, and generally there is also *a little growth continued after vitality has ceased in the leaf*. This causes the leaf to fall. The leaf (above the articulation) does not swell,—the stem (below the articulation) does, and thus the two parts separate, and the leaf falls. In those cases however, where the leaf stays on all winter growth ceased about the articulation, at or before the loss of vitality in the leaf. There is therefore, no power to throw it off until the spring, when the swelling bark does for it, what in other cases it accomplished in the fall.

If two branches are taken from two oaks, both of one species, it will readily be seen that in the one which has shed its leaves in the fall, the buds are very plump and well developed; while in those which have retained the leaves, the buds in the axils are much smaller.

As a practical matter, those which shed their leaves will be found hardier than the others, their vitality is more powerful.]

Tap Roots—*L. S.B., Chicago. Ill.*—In a recent number of the *Gardener's Monthly*, remarking on roots, I was interested in what you say about tap roots. You seem to place very little value on them. I have been led to believe them very essential, and always give my gardener as my advice, to save the tap roots, when we are transplanting anything on our lawn. Was your remark intended to have the weight it seems to bear, or a slip of the pen? I have read so often of the great value of tap roots, that I want to be

sure I understand you. It would seem as if nature would hardly make them, if they were of no use."

[No one disputes the last point—"nature makes every thing of some use." Beards are of some use; perhaps to exercise our industry to keep them shaven away. As to tap roots, our correspondent understood us correctly to say that they are not of the slightest service towards the nutrition of the tree. The shortening of a tap root is of no more injury to a tree, than is the shortening of the finger nails to a man. This matter was settled by Senebier and others over a hundred years ago. Their experiments we have repeated; and no intelligent man teaches any other doctrine.]

Edgings.—*J. B., Baltimore, Md.*, writes:—"What could I use, as an edging in the place of Box, as an edging to a few flower beds. I like Box very well, but would rather have some flowering plant, if anything can be had that would make as good a border as Box."

[We fear there is nothing that will make as good a border as Box, or some of the dwarf Arborvitæs. Of flowering plants, the best is the Perennial Candytuft. This will flower in April. The mountain or Moss Pink—*Phlox subulata* is a very pretty, very dwarf edging; it flowers in April and May. The old Scotch Pink is also a very good thing, as are also some dwarf Irises. The Periwinkle may do; also the *Achillea millefolium* rubrum and *tomentosum*—the last a pretty yellow. Indeed, any of the tufted growing perennials, like Betony, Lobelia, Phlox, and so on, would do tolerably well, but none of them will ever look so neat as the ordinary Box or Arborvitæ edging; and all ought to be taken up and replanted every other year.]

Collecting Essays—A Connecticut correspondent writes as follows to the Editor. It is pleasant to feel that we do not labor in vain for the pleasure and profit of our readers. But as to collecting our writings we doubt the propriety. We have never yet met with such a work that was worth reading twenty years after the author's death; and in these days the progress of scientific discovery is so rapid, that the best of writers can take little pride in his own works very long after they appear. Sometimes we fancy there are a few things we would like to have credit for in the future, but on the whole feel pleasure enough in the pursuit; and what future rewards or punishment is to be given to our reputation concerns us little now. However here is what our friend says:

"I should be glad to be known to you in other ways, and hope some day to see you face to face, to thank you for the strength I have had from your writings. I do not like to say that you have broken into the old "school" ideas, or formed a new "school," for I dislike the word "school" always as much as I do "clique" or "party." But I do say, that I always find what you say of soils and culture true, when I commence to dig and when I get through digging—and you are certainly one of the few who have adapted to us the best English cultivation. You also have the rare faculty of awarding praise as well as blame, and making it acceptable as well as useful.

Your writings are such as will be collected—and ought you not yourself to do it—you, who are so entirely catholic in Horticulture?"

Mr. William Day has invented a patent "velocipede" cultivator and strawberry scuffle hoe combined, for which he claims the following merits:

It will plow and harrow the ground both at once, thoroughly pulverize the soil from 3 to 10 inches deep *at the will of the operator*, and do this without turning any furrow or covering the smallest plant. It will adjust to any width between rows from 1 to 4 feet; is easy of draught—strong and not liable to get out of repair. It will do the work better and faster than 15 men could do it by hand in a given time. It will work up the soil between rows of onions, corn, beets parsnips, carrots, turnips, cotton, tobacco or strawberries, as soon as the rows can be distinguished. It is *not possible to clog it*, working equally as well in fine garden mould or a stiff clay. It leaves no lumps. Any boy that can plow can work it.

Ridge and Furrow Roofs.—*Ignoramus, Stockbridge, Mass.*, ask: "What are ridge and furrow roofs to greenhouses? I often see the term used in Horticultural journals and want to know."

[We do not know of any specimens in this country to refer you to as an illustration. In Europe it signifies a single roof, on a single greenhouse, which is composed of a number of small roofs, instead of the one plane, as we usually see greenhouse roofs; it then appears as a succession of small roofs and furrows, looking like a lot of small span roofed houses, set on the roof of a single greenhouse. This is as near as we can come to the idea, without either a very elaborate description, or a cut as an illustration. Do any our readers know of a ridge and furrow houses in the United States?

Oiled Linen for Packing Plants—*Mr. George Such, South Amboy, writes:* I send you by this mail a bundle containing two plants of Euonymus. My object is to call your attention to the water-proof material in which these plants are packed, as it is both cheap and good. It seems to be a sort of rough cotton imitation of oiled silk, and comes from France and elsewhere, as a protection to the cases of silks and fine goods generally. I buy the stuff from men who deal in second-hand boxes, old rope, bagging, and other trash from the dry goods stores, and pay from 8 to 10 cents a pound for it.

Perhaps to many of your readers this is nothing new, but others may be glad of the hint.

In my article on the Gladiolus in the February number, I wrote "small flowers," not "male flowers," as printed.

[The plants arrived in excellent condition]

Oyster Plant.—*An English gardener, Pittsburg, Pa.*—"Excuse my ignorance in asking what of course is a very simple question to you, but I have been in the country only a few months, and found a plant in much request on the place where I am employed. Is it a native of the United States? and why called oyster plant? What time to sow the seed?"

[It is a wild plant of England, where it grows in wet meadows. Our correspondent may know it better as "Salsify," in the English gardens, where it is sometimes grown, though not so popular, nor do we think growing so fine as here. It is boiled, and then made into balls and fried, when it has a fancied oyster flavor, whence its name. It likes a very rich, rather moist soil, and must be sown amongst the earliest seeds in spring.

Collection of Cones of Pines.—We see by the English papers that a collection of American Pine cones has been received, and highly prized, by the British Museum in England. It is pleasant to notice that Americans, while liberal to other nations, do not forget their own country. Mr. Josiah Hoopes, of West Chester-

has presented his collection of Cones to the Academy of Natural Sciences of Philadelphia; and Messrs. J. M. Thorburn & Co., the enterprising seedsmen of New York, have donated Cones of the following rare species: Pinus muricata, P: insignis, Pinus Coulterii, Cedrus Atlantica, to the same institution.

If any have anything rare in this way they would like to donate, we would cheerfully present them in their name.

Grass in Box Border.—*J. B. Baltimore, Md.*, inquires: "Around one of my flower beds, on a grass plat, I have an edging of Box. I find much difficulty in keeping out the grass. Almost every week, during summer, I pull at it, till my fingers are sore, and yet it always has an untidy look. Can anything be done to preven its growth?"

[We can answer this with more satisfaction than our correspondent's last question. If she will have the grass turf cut away back from the Box, say two or three inches, so as to leave the Box, as it were, an inch or two in cultivated ground, she will have no difficulty in keeping out, and keeping down the little that may come up in the Box,]

Growing Larch Seed., *S. M.*—"I have a pound of European Larch seed; will you please inform me, through the *Monthly*, how I shall treat them and the young plants the first year? Also will the Larch grow on stony land, not rich; and will they flourish on rich new land? I intend them for future grape stakes or posts. By giving the above information, you will oblige your Bluffton friend.

[Larch is very easy to grow. Sow as soon as the ground is dry enough to sow any seeds in the spring, in light sandy soil; cover with brush wood or anything that will make a partial shade through the summer. They usually sprout in about 6 weeks, and before fall will be one or two inches high. Your soil is excellent.]

Amaryllis.—A *Baltimore* friend has much trouble to name and distinguish them. We do not wonder. There are so many natural variations and hybrids, and specimens prepare so badly for herbariums, that it is not easy to name them, even when the plant has been growing, and is in flower under our eye. We can hardly

help her in her doubts from the descriptions. If any of our correspondents have a fair collection of Amaryllis, which they believe to be properly named, and which they have had fair success in growing and flowering freely, we should be very glad to know all about it.

Improved Hanging Basket—*Mr. Sutherland* hands us a basket he has patented, which is a great improvement over all that have gone before. A serious objection to all other kinds is that in watering they have to be taken out to drain, or the dripping water seriously annoys the tidy housekeeper. In this plan a handsome rustic dish encloses the basket proper, and is so neatly arranged as to look like the real basket itself. The only drawback we note is, that this double lining adds to the weight, but possibly the articles could be made much thinner than in the one before us.

Transplanting Cabbage Plants—*B. F. B., Reading, Pa.*—"Is it necessary that cabbage plants, for cold frames, should be first sown in open border and then transplanted into the frames—would they not do as well if they were sown in the frames, and not transplanted?"

[If they were sown *very thin*, and had extra protection from frost, they would do as well.

The transplanting adds to their hardiness; every part of the plant becomes exposed to the air and light, and becomes what Gardeners term "hardened." A very little frost will kill plants that are huddled together in a seed bed.]

Sale of Iona Island.—By an advertisement in another column, we learn that Iona Island passes from the hands of Dr. Grant to Messrs. Hasbrouck and Bushnell. During the reign of the late proprietor, it has had many warm friends and bitter enemies. For our part we always prefer to dwell on a man's good deeds than his failures. Whatever these last may have been, there is no doubt but Iona Islands deserves a very prominent place in the panegyric on the actors in America's grape history, when it comes to be delivered. We wish the new proprietors every success.

Name of Plant.—*J. L. H. F., Dayton, O.*—Enclosed please find a twig of a vine which I have in my office, entwining a picture of Lincoln. It is neat and graceful. It flourishes in my office wherein I burn coal in a stove; the air is dry and sometimes dusty and smoky. It don't seem to do so well when exposed to the direct rays of the sun. What is the name?"

[*Ficus stipulata*,—next to the Ivy, the most useful parlor plant one can have.]

Berries of Aukuba Japonica.—A few years ago only the female variety was in cultivation. Recently we have had the male introduced; and in England berries have been produced, which as we have shown by extracts, are esteemed highly ornamental. We can confirm this by having received a few berries from Mr. Geo. Such. They are probably the first raised in this country. An intelligent correspondent of the Nova Scotia *Journal of Agriculture*, quotes us as saying "The Aukuba (*Aucuba*) is not described in De Candolle or Walpers." We think we have never said so. It is in the 4th vol., D. C. Prodromus, classed with the dogwood family. From a slight examination of the seeds, sent by Mr. Such, however, we suspect it has as much relation to the Holly as to the Dogwood class.

The Cineraria.—English reports say that the Cineraria, as a florist's flower, is retrograding. No new ones have been raised superior to the old old ones. They are seldom now named and sold as distinct kinds. In this country, named kinds have never been very popular, owing to the difficulty of keeping them over our hot summers. Still they are indispensable ornaments to our spring windows and greenhouses. They are mostly raised from seed sown in August and September.

Pears for Central Illinois.—We should be much obliged if any of our correspondents will send us the names of three each, of the best summer, fall and winter pears, for Central Illinois, for *market purposes*. Of course we have no personal experience, and we find the material in our possession very contradictory. We want the information for a valued correspondent.

The Greeley Grape Prize.—Mr. Greeley does not seem satisfied that his $100 prize was awarded to the Concord. At a public meeting in New York, he recently said, "all my money did, was to advertise a grape already known; thus improvement was checked,—not stimulated. I am a little discouraged by the result, and do not propose to offer another bank note for a plate of common grapes."

Destructive Fire.—We regret to learn of the total destruction, by fire, of the residence of E. H. Skinner, of Marengo, Ill., involving a loss of about $16,000, on which he had an insurance of $10,000. Mr. S. has been largely engaged, and is widely known as an extensive propagator and tester of new varieties of fruit, having now over two thousand varieties growing on his place. He will have the sympathies of his acquaintances and professional brethren.—*Western Rural.*

Pride of China.—*J. B., Baltimore, Md.*—This is not an American, but an East Indian tree. Botanically, it is *Melia Zederack*. It will live, but not get up to be a tree near Philadelphia and we suppose will not in Baltimore; but it does well so far north as Richmond, Virginia. It is about as hardy as the Crape Myrtle, which is also a native of the same region as the other.

Mendenhall Dibble.—We have many inquiries about this Dibble, figured in our January No. Any blacksmith could make one from our illustration. We do not know any one who keeps them ready made. We are sure it would pay some one to do so.

The Language of Flower.—Isaac Pool, of the Botanical Gardens, Chicago, has added to his catalogue, a list of the representative flowers, collected from Darwin's "loves of the Plants," which will interest many of our readers. Catalogues gratis.

Blooming of the Oldenlandia—*J. W. L., Philadelphia*, finds this well known early blooming native plant, in bloom at Laurel Hill, on 14th of March—as early a date as we know of.

BOOKS, CATALOGUES, &C.

Decandolle's Prodromus, part 16, second section, containing among other things the *Coniferæ*, by Professor Parlatore.

(*Concluded.*)

The author has, while throwing all the Firs, Spruces, Cedars, and so forth into Pinus, been obliged to form anew, what he terms, *sub genera*. With the last named Pine, ends his first *sub* called *Pinea*, which he characterizes chiefly by the *thickened apices of the cone scales*, and proceeds to *sapinus*, which are in the main marked by thin scales, and which have cones maturing in one year, unlike the *Pinæ* which take more. Our Cedar of Lebanon then becomes *Pinus cedrus*, of which glauca and atlantica are considered distinct varieties. Cedrus Deodara is *Pinus Deodora*. The American Larch is *Pinus pendula*, and so on with all the Larches, *P. larix*, being the common European one.

Professor Parlatore still sticks to the orthodox doctrine of making *Picea* mean the spruces, and *Abies* the firs, although it seems almost like insisting that we shall not call the sun *he* or the moon *she*, to push the point. It is wrong, we know, but it does not matter here, for both Abies and Picea are abandoned by the author. Our White Spruce is *Pinus alba;* Red, *Pinus rubra*, and Black, *Pinus nigra*,—he classes them all as distinct species.

Pinus obovata, he regards as distinct from *P. orientalis*, but says nothing about "P. Whitmanniana," which is regarded in cultivation as a lawful synonym of the latter. Our old friend Norway Spruce, we hardly recognize, as *Pinus picea*; Abies Engelmannii of Parry is *Pinus commutata*, newly named by Parlatore, because Carriere had used the name for something else. Under *Pinus Menziesii* comes Abies Sitkensis, Picea ajavensis, Abies Jezœnsis, Abies microsperma. The common Silver Fir is *Pinus abies;* P. Nordmanniana he does not afford even the doubtful honor of a variety, but gives it absolutely as the Silver Fir. *Cephalonica*, however, he deems but a slight variety of *Pinus abies* of which Appollonis, Panachaica, Reginæ amalia, Peloponnesiacà are all one. *P. pinsapo*, however, is a distinct species, as also is *Pinus cilicica*, which constitutes vast woods in the Taurus, associated with *Pinus cedrus*, and extends far into Affghanistan in the East Indies. *Pinus Balsamea* has no synonyms; but *Pinus firma* has

under it Picea homolepis, and Abies bifida. Under *Pinus Webbiana*, we find Abies densa, Abies spectabilis, and A. Chilrowensis. *Pinus sibirica* was not familiar to us, but here we find our well known friend Picea pichta. Abies lasiocarpa is the synonym of *Pinus amabilis*, here also we find Murray's Abies bifolia, Abies magnifica, and A. grandis, which, however, is another thing from the real Abies (now *Pinus*) *grandis* of Douglass. Under this last comes Picea Lowiana of Gordon, and Abies Gordoniana of Carriere. Picea Veitchii he says, it is not possible to retain, "because Roezl gave that name to another," so he re-names it *Pinus selenolepis*.

We now get to the Hemlock (Tsuga) section. The first *Pinus Tsuga*, was once Abies Tsuga, and Tsuga Sieboldii of Carriere. *Pinus Canadensis*, our Hemlock, has no synonym of importance. Under *Pinus Mertensiana* we find many fine names, Murray's Abies albertiana, Kellogg's A. Bridgesii, Jeffrey's A. taxifolia. Abies Brunoniana is given to *Pinus dumosa* of Don; Abies Williamsoniana, Abies Hookeriana and Picea californica of Carriere, are given all to *Pinus Pattoniana*; Pinus Douglasii has no synonym of importance. Keteleria Fortunii and Abies Jezoensis of *Lindley*, are one with *Pinus Fortunii*. The genus Veitchia, was founded on an abnormal branch of some other species found in Lindley's herbarium from Veitch's collection in Japan. *Sequoia gigantea* is retained on the oldest authority, "Torrey in Silliman's Journal," although this is disputed.

Under *Taxodiums*, besides *T. distichum*, under which as *var. microphyllum* he includes Glyptostrobus pendulus, we have another *T. mucronatum*, described by Tenore in 1853, inhabiting the temperate parts of Mexico, in latitudes from 5000 to 7000 above the level of the sea.

Gordon's and Carriere's blunders, which we have for so many years labored to show, are here recognized, and *their* Thuja gigantea, given as synonym of *Libocedrus decurrens*; while Thuya Lobbii, Thuya Standishii of Gordon, Thuya Menziesii Douglass, Thuya plicata Lambert, Thuya Douglassii Nuttall, are all referred to *Thuya gigantea* of Nuttall. *Thuya plicata* of Don is, however, retained, and T. Warcana of Booth given to it. The only *Thuyopsis* left alone, is *T. dolabrata*. The Chinese Aborvitæ is still preserved as *Biota*, varying into its numerous varieties Aurea, Nepalensis, Tartarica, and many others. Gordon's tartarica is, however, a form of Thuya occidentalis. The weeping variety, *Biota pendula*, is the only form he describes as a distinct variety. The Junipers and Yews are all now left that will especially interest our readers.

Under *J. communis*, he gives a variety *fastigiata*, which includes *suecica* and *hibernica*, "oblonga" of Gordon is *Var reflexa*. The true variety *oblonga* is a caucasian variety. Var. *hemispherica* is a dwarf form, originally found in Mount Parnassus in Greece. The *Var. alpina*, is the trailing form found in the mountains of Norway, the Pyrenees, in the Sierra Nevada, in Sardinia, Dalmatia and the Caucasus, the Himalayans of Asia, in Kamskatka, around Lake Michigan and Lake Huron, and along the range down into New Mexico—a wonderful distribution. Juniperus squamata is given as a variety of *J. recurva*. Under *Juniperus Sabina*, we have the creeping forms of "Lake Huron," which cannot be. They may be good varieties, but not synonyms. Under the Red Cedar, *J. Virginiana*, but two distinct varieties are given, *glauca* and *Bedfordiana*; but either these two are unnecessary, or there should be scores of others.

Under the head of *Taxus*, *T. baccata* of Europe, *T. globosa* of Mexico, *T. canadensis* of the East, and *T. brevifolia* of the West North America, *T. cuspidata* and *T. tardiva* of Japan, are all, and all held distinct species.

We supposed it was understood that *Cephalotaxus Fortunii* and *C. drupacea* were male and female forms of the same thing, but Prof Parlatore describes the male and female organs of *each*, so they must be distinct. The *Podocarpuses* are very numerous, no less than 65 good species being described; most of these would be too tender for culture in the northern States.

There will be widely different opinions about the wisdom of this arrangement herein made. One thing is clear. Prof. Parlatore is one of those sterling men, who planting themselves on the rock of eternal truth, insist on justice, though the "heavens fall." It is a recognized right amongst Botanists that priority of description, shall have the priority of name. No matter how time-hallowed a wrong may be, it must give way to an established priority of right. In the nomenclature of Coniferæ, unjust names have become so generally diffused, that most botanists, in view of the utter hopelessness of a change; would have surrendered principle, and made things to suit the circumstances. We cannot

but admire this spartan courage in the present case, however much we may feel the virtue almost thrown away.

We cannot agree with Dr. Parlatore in the propriety of *Pinusing* Larches, Firs and Spruces together. There may be points where they all meet so closely as to make it difficult to decide to which any form may belong. But genera are not natural divisions, but arbitrary divisions to aid the mind. The whole vegetable kingdom runs more or less into an unity. "Larch, Spruce, Pine, Fir, etc.," convey distinct ideas to the mind, and we do not see that anything is gained merely by taking these names from a generic idea, while retaining them to represent sub-divisions in the same thing,—especially after so long a use of them in the way they have been.

As to the synonyms we agree in the main with the general justness of the author's references. The monograph shows how much of the great confusion in the names of Coniferæ, we owe to either the hot haste of our English or French friends to name Pines from very imperfect material, for fear others should have a chance to claim priority of right in naming them, or else from an absolute incapacity to name plants through lack of a practical acquaintance with laws of variation, a knowledge of which would give them the power to distinguish a temporary and recent change, from a long established form—the only real difference between a species and a variety.

THE GERMANTOWN TELEGRAPH. P. R. Freas, Editor and Proprietor.

Amongst the hundreds of exchanges that come to an Editor's table, are always a few that are eagerly hunted for by those favored friends who are fortunate to get the privilege of the "sanctum." The *Germantown Telegraph* is always one of these; and if our *Monthly*, on the table of our contemporaries, is as much quarrelled over as to who shall have the first reading of it, as this is on ours, we should want no better test of its value. It is curious also to note that of the hundreds of "family newspapers," which have columns for farmers, the *Germantown Telegraph* is the only one which is received by the agricultural press into their circle. In the list of Agricultural periodicals recently given in the Department of Agriculture, the *Telegraph* stands alone in this respect. Mr. Freas may well be proud of his prominent position, and as we notice the last number commences his *Fortieth* annual volume, it seems a fitting time to compliment him on his success.

NEW AND RARE FRUITS.

MISSOURI SUPERIOR APPLE (*Syn. Large Striped Pearmain?*)—Specimens exhibited at the Illinois Horticultural Society, at Bunker Hill, Dec. 15th, 1868, by A. M. Lawver, from near Kansas City. This appears to be a favorite in Missouri. The Committee declared it to be very like the Large Striped Pearmain, of Kentucky, and supposed it the same.

Fruit globular, sometimes oblate, regular, very large and handsome. Surface smooth, yellow, covered with mixed red, and splashed or striped carmine, the whole so mixed and tempered as to appear gray; dots numerous, small, yellow, indented.

Basin shallow, wavy; eye long, medium, closed.

Cavity acute, deep, wavy and brown; stem medium or short.

Core wide, open, regular, meeting; capsule, large; seeds numerous, long, dark; flesh yellow breaking, juicy; flavor sub-acid; use market, kitchen, and perhaps table; quality, from good to very good perhaps; season December to February.

It is probably only a form of *Large Striped Pearmain*.

SIGLAR GRAPE is said to resemble Delaware, but fruit said to be twice as large.

GRANT RASPBERRY is a new variety from Auburn, N. Y. Color "red," size "large," shape "conical." Ripens with Red Antwerp.

TETOFSKY AND FOURTH OF JULY APPLES.—Mr. Hanford wishes us to correct the statement made by him in the March number, that, in some works on Pomology, and some of our most reliable Catalogues, it has been stated that the Fourth of July was a synonym of Tetofsky.

[Dr. Warder says Fourth of July is *supposed* to be a synonym of Tetofsky.]

THE STARK APPLE.—*Mr. Hanford, Columbus, Ohio, writes:* May it not be possible that the Stark is not the Pennock? Mr. McMaster, who has made the Stark his study for years, does not think it is. He says the Stark and Pennock have grown side by side for fifty years, and he knows both varieties very well. He has exhibited the Stark at various times; has compared it with others; has endeavored to find it identical with some known variety, but has not been able to do so. Specimens of Stark and Liberty have been placed together, and they could not be told apart. Stark and Rawle's Janet have been placed together, with the same result. It resembles the Pennock; so it does the Minkler.

Most of the members of the Ohio Pomological Society were probably familiar with the Pennock, yet, after repeated efforts to identify the Stark, it was acknowledged to be a variety they did not know.

He says that it has the same formation of top and longevity as the Pennock, continuing vigorous and healthy, while many other varieties fail near them. But the young growth and foliage is different,—that of the Stark more resembling the Baldwin; the leaves being large and dark, and the growth strong. The fruit resembles the Baldwin, but is not so good; also the Pennock, but is better; coming nearer to the shape of the Baldwin than the Pennock, and nearer the color of the latter than the former."

[We can only say that, so far as the fruit is concerned, we could not but agree with our friends at the Pomological meeting. Some, who had just returned from the South, handed the writer an apple, to inquire its name; and we pronounced it a "Stark, from Ohio," and were assured they were the Pennocks of the South. The Pennock has almost disappeared from our section, and we did not, at first, recognize the similarity, but could not dissent after recalling it. Yet it may be, as Mr. Hanford says, distinct. The Albemarle Pippin cannot be distinguished from the Newtown Pippin, by the fruit, yet it is known to be a distinct seedling, with a stronger constitution. It will do well where the Newtown Pippin will not. The Stark may be another case.—ED.]

BORSDORFER APPLE.—I agree with F. S., of Tipton, Ind., when he calls the Borsdorfer, in the *Gardener's Monthly* for February, "one of the best of apples in existence,"—if he means the Borsdorfer as it is in Germany—in the texture of its flesh, and flavor, it is incomparable; it is the Seckel of Apples. But, alas! it is the next thing to being worthless in this country, so far as my experience goes.

C. F. Yaeger, Esq., of Columbus, Ohio, has a specimen of the Borsdorfer in his garden, which he imported from Germany some 15 or 20 years ago. It is a large tree, about 10 inches or a foot in diameter; but it carries the excellent quality of late blooming so far, that it has not commenced blooming yet worth speaking of. It bears a few stunted, very small, apples, which are of no account.

If I were to plant out an orchard of Apple trees, the Borsdorfer would not be among them, excepting, perhaps, one or two specimens, to see if, by some chance or other, they might happen to do well.—FRANK ROVER, *Dayton, O.*

FOURTH OF JULY APPLE.— Mr. Yaeger, above named, is an enthusiastic horticulturist, who imported the Fourth of July Apple, which, as he claims, was raised from seed in his brother's garden in Cassel. I have seen the tree (Fourth of July) bear a full crop of apples, when all the other varieties, at the same time and in the same place, failed to have any fruit, and that in an orchard where the Red Astrachan was among the varieties. The apple is above medium size, looks very handsome, and is sweeter in flavor, but not so coarse in flesh, as the Red Astrachan. The tree makes a fine appearance, resembling, with its large, dense, dark foliage, a European Linden somewhat in shape.

Mr. Yaeger has raised several fine peach seedlings, but they seem to be "born to blush unseen," because Mr. Yaeger is too modest to make much noise about them, for fear he might be suspected of having an axe of his own to grind by doing so.—FRANK ROVER, *Dayton, O.*

PARK'S KEEPER APPLE—The history of this apple is, that it was grown from seed; probably of M. Superior, which it much resembles, but from which it differs, as we are informed by Mr. Lawyer, in the tree growth.

Fruit large, globular, or oblate; regular; surface smooth, yellow, covered with mixed red, splashed with carmine, and with a gray shading; dots rather numerous, small, yellow.

Basin shallow, regular; eye small, closed, long; calyx reflexed.

Cavity acute, deep, wavy brown; stem medium,

Core medium, regular, open, clasping the eye; capsules large; seeds numerous, long, pointed; flesh very yellow, breaking, firm, juicy; flavor sub-acid, aromatic; uses, market and kitchen; quality quite good; season December to March, or longer.—Dr. Warder, in *Journal of Agriculture.*

DOMESTIC INTELLIGENCE.

APPLES IN MINNESOTA.—A meeting of the Minnesota Horticultural Society was held at the rooms of the State Historical Society, Capitol Building, in St. Paul, January 27th, 28th. The large attendance, and the great earnestness manifested in the discussions, demonstrated the growing interest in the cultivation of fruits in Minnesota.

The question of varieties of apples suited to Minnesota soil and climate, occupied most of the attention of the meeting. The old standard question, "Is the Duchess of Oldenburg perfectly reliable?" came in for its usual share of discussion, the sense of the meeting being, as usual, in favor of its entire reliability, especially when young trees,—that is, one or two years old,—are planted.

The Tetofsky was generally considered hardy.

The following varieties were recommended for further trial: Talman Sweet, Sweet Pear, Fameuse, Ben Davis, Blue Pearmain, Fall Orange, Golden Russet, Perry Russet, Red Astrachan, Price's Sweet, Bailey Sweet, and St. Lawrence.

Several promising Seedlings were exhibited. The cultivation and improvement of the Siberian Crab family, was very earnestly recommended.

The following varieties of the small fruits were recommended for cultivation; *Currants*,—Red Dutch, White Dutch, Victoria, White Grape and Black Naples. *Gooseberries*,—American Cluster, Houghton Seedling and Downing.—*Strawberries*,—Wilson, Green Prolific and Downer; also for trial, Jucunda, Russell, Agriculturist, and others. *Raspberries*,—Doolittle, Miami, Seneca, Philadelphia, Minnehaha, Kirtland, Purple Cane, and Native Red. *Grapes*,—Concord, Delaware, Iona, Rogers' Nos. 4, 15, 19, Creveling, Muscadine, Hartford and Clinton.—*Western Rural.*

THE CINCINNATI HORTICULTURAL SOCIETY.—A Chicago speaker thus compliments this institution: "The Cincinnati Horticultural Society numbers one thousand members, and I very much doubt if their average attendance is as large as ours. Of working members, I am confident they will not average as large an attendance as this society. Among the life members, there are a great many who never attend the meetings; and of those who pay their regular annual fee, there are, doubtless, a great many who seldom, if ever, see the inside of the Society's rooms.

The citizens of Cincinnati are liberal and enterprising, and take a just pride in their local institutions; and with a commendable generosity, help to sustain and build up their local Horticultural Society. They have done it for years, and it is through the liberal and enterprising spirit manifested by the citizens of Cincinnati, that the Horticultural Society of that city stands among the first in the land, in point of talent and enterprise."

CURCULIO,—ANOTHER MODE OF RELIEF.—William Day, of Morristown, N. J., spoke at the Farmers' Club, of a German gardener of his acquaintance, whose plum trees bear, notwithstanding the curculio. He puts under his trees a tub partly filled with potash water, or very strong soap-suds. On the water floats a small candle fastened to a block. The light is near the water, and as the insects fly near it, many of them dip their wings and perish.

FLORA OF CENTRAL ILLINOIS.—*Mrs. Edw. N. Greene*, in *American Naturalist*, notes the fact that in this region, there are only two representatives of Ranunculaceæ—Anemone Pennsylvanica and Anemone Cylindrica. Only one Violet—Viola cucculata, the common dog violet; not a single representative of the large American order of Ericaceæ; but three Orchids. The Aster family, however, are very much at home.

THE DELAWARE GRAPE.—We have seen this grape, grown on clay shale land, well manured, ripen, or rather color, its fruit as early as the Hartford. On sandy and gravelly soil, while one or more berries have colored early, the main part of the bunch has not matured any earlier than the Concord—*Horticulturist.*

MALINDA GRAPE is said to be a new early white variety, as good as Rebecca.

GOOD FOR THE FLORIST.—A correspondent of the *Mobile Advertiser* says that, in New York, the past winter, the biggest fortunes have been made by the *fiddlers* and *florists*.

LARGE PEACHES IN THE SOUTHWEST.—The *Dixie Farmer* says some peaches were thirteen ounces each. Hundreds of bushels were sold at Columbia, Tenn., the past season.

PEARS FOR MAINE.—Bartlett, Brandywine, Doyenne d'Ete, Dearborn's Seedling, Rostiezer, Buffum, Flemish Beauty, Fulton, Louise Bonne de Jersey, Nickerson, Beurre Diel, Duchesse d'Angouleme, Passe Colmar, Vicar of Winkfield, McLaughlin, Winter Nelis, Clapp's Favorite Goodale.—*Maine Farmer.*

HORTICULTURAL NOTICES.

PENNSYLVANIA HORTICULTURAL SOCIETY.

The monthly meeting for March was held on the 16th inst. The competition was not as brisk as usual, but on the whole, very interesting. Mr. Kelley, gardener to F. R. Starr, had a very neat collection of pot plants very well grown. Amongst them was a specimen of Jasminium triumphans, a species or variety between J. revolutum and J. grandiflorum. The rare and very interesting Azalea Rinzii, was also among them. This is a distinct species from the regular Indian form. The flowers are like small forms of the common mountain Laurel, and indeed, as our intelligent readers know, except in the number of stamens, there is not much difference between an Azalea and a Rhododendron—the former having 5, the latter 10.

The Indian Azaleas were very good, but not equal to former exhibitions. The dwarf Cinerarias were very pretty, and deserve more attention than they usually get. Mr. Dreer had a beautiful collection. Mr. J. Huster, gardener to J. B. Heyl, and Mr. McDonald, gardener to Mr. Baird, also had collections.

A collection of well-grown Hyacinths, in pots, came from Mr. Dreer, who also had a cut flower of a new yellow Tea Rose, the Queen of Portugal. It bids fair to rival Marshal Niel. The Pansies in pots, from Mr. Dreer, were the best grown pot plants we ever saw.

Mr. Thomas McKenzie had a very pretty collection of cut Camellias. We noted the following dozen of them among the best in the lot: Duchess d'Orleans, blush striped; Dunlap's White, Mrs. Bliss, deep rose; Wm. Penn, light rose; Town's Blush, Old Double White; Reine des Fleurs, carmine rose; Jenny Lind, blush white, delicate pink stripe; Imbricata Red, white spots; Marie Piccolomini, light rose; Candidissima, white; Miniata, pale rose.

Mr. Joshua Pierce, of Washington, D. C., sent cut flowers of Harriet Lane. This is a salmon with deeper stripes; something like old Maculata, but a better thing.

The vegetables were not very full; but a choice collection by Mr. J. McDonald, was very creditable. Amongst them were Tomatoes, Mushrooms and Cucumbers, of this season's growth. His Early Butter Lettuce was excellent.

No fruits were shown.

NAMES FOR THE ROGERS' GRAPES.

At the earnest solicitation of the Lake Shore Grape Growers' Association, and the often expressed wish of other horticulturists, Mr. E. S. Rogers, of Salem, Mass., has consented to give distinctive names to the leading varieties of his hybrid grapes, in place of the numerals by which they have been heretofore designated. He proposes the following, with the intimation that other numbers may be named hereafter, if deemed desirable:

For No. 1	—Goethe,	No. 19	—Merrimack,
" 3	—Massasoit,	28	—Requa,
" 4	—Wilder,	41	—Essex,
" 9	—Lindley,	43	—Barry,
" 14	—Gaertner,	44	—Herbert.
" 15	—Agawam,		

I witnessed very fine displays of the Rogers grapes, the past fall, at the New York and Ohio State Fairs; also at Knox's Grape Show at Pittsburg, and the Lake Shore Exhibition, Painesville, giving me a much more favorable impression of these varieties than I formerly had. Number 28, at Mr. Knox's, closely resembled Salem, in appearance and quality; and there, as well as at Rochester, numbers 33, 36, 43 and 46, are large black varieties, much like Nos. 4 and 19.

The following remarks on the success of the Rogers and other Grapes, were made at the meeting of our Lake Shore Grape Growers' Association, at Cleveland, the past month.

M. B. BATEHAM, *Sec'y.*

GRAPES OF THE LAKE SHORE IN 1868.

Around Sandusky, Mr. Richmond said the grapes fared about the same as on Kelley's Island: Catawba a general failure; Hartford, Concord and Ives rotted some, but ripened a small crop; Delaware set pretty well and escaped rot, but foliage not very good, and fruit ripened poorly; Iona and Rogers' Hybrids rotted considerably, and leaves suffered. Weather of June very bad; some better at Castalia and eastward.

At Vermilion, Mr. Summers said the Catawba ripened a fair crop on the best localities—dry clay soils—but generally failed to ripen, and suffered injury by frost, the 17th of October. Delaware, Isabella and Concord produced a fair crop, and the Iona, where fairly treated, proved quite satisfactory. All suffered more or less from the rain storms of June, but not as much as at Sandusky and the Islands.

At Berlin, Mr. Lowry said there was a fair crop of Catawba on the elevated lands, and some ripened so as to be saleable, though not very sweet; and a good deal was injured by frost before fully ripe. Delaware, Iona and Israella produced fair crops. Mr. Phillips, of Berlin Heights, had a good crop of Concord, Delaware, and Iona.

At Brownhelm, Mr. Hopkins had a good crop of Delaware, Concord and Iona. Catawbas looked well, but did not ripen perfectly on sandy ridge, three miles from the Lake. The Iona held its foliage well,—better than the Delaware; fruit ripened a little later,—earlier than the Catawba; vine as healthy as Catawba, next to Concord.

At Sheffield and Avon Point, it was reported the Catawba set a moderate crop, though some vineyards on low ground, or not well-drained, suffered from rot; a portion of the fruit ripened so as to be marketable, but the greater part was overtaken by frost, as elsewhere. Mr. Terrell, on Clay Ridge, four miles from the Lake, had a fair crop of Isabella, Delaware and Iona; Catawba seldom ripens with him. Has frost earlier than on the Lake Shore.

At Dover Bay, Mr. Mottier and others said the crop of Clinton, Concord, Ives and Delaware was quite good; Catawba rotted a little, did not ripen perfectly.

At Rockport, Captain Spalding said, on his dryest clay land, Catawbas ripened fairly, though not as sweet as usual. Concord and Norton's Virginia a fair crop. Iona bore too much fruit, and foliage failed before it ripened. Delaware much the same—both should have been thinned. Rogers' Nos. 3, 4 and 15, did pretty well, but foliage mildewed somewhat. Adirondac and Israella had grown poorly with him.

Dr. Kirtland said he was much pleased with the Rogers grapes; had various numbers, all of them good. No. 8 was quite rare, and was a good fruit, not tested in many localities; it had done well with him until the past season it mildewed badly, perhaps owing to severe summer pruning, which he would not practice again. He has found advantage from thinning his Catawba and other grapes when set at all full; and practices manuring all the moderate growing sorts, with very good results. He astonished his friend Carpenter, at the State Fair last fall, with his bunches of *Mottled*—the results of thinning and manuring.

J. A. Harris of Cleveland, has a vineyard on the lake shore in Rockport, soil a shaley clay. Catawba promised pretty well, but did not ripen perfectly, and was injured by frost. Delaware, a good crop and healthy vine. Iona, very good crop and foliage better than Delaware; prefers it to all others for his own and family use. Gathered the Ionas after the first frost; the fruit was so ripe it was not injured. Rogers' 15 ripened well. Rebecca had done well with him; Adirondac rather a poor grower.

At East Cleveland the Catawba had not ripened well, especially on level or sandy soils. On dry, clayey lands, the crop was fair, Concord and Delaware ripened a good crop.

On Collamer ridge, Dr. Dunham said, the Catawba suffered no material injury by rot, and in most of the vineyards the fruit ripened so as to sell at fair prices, though not as sweet and rich as the previous year; and some of the fruit left to ripen more on the vines, was damaged by the frost in Ootober. Delaware and Iona had not done very well with him.

At Mr. Leick's vineyard, on the same ridge, it was reported, Concord, Ives, Norton, Delaware and Iona had done well. The Norton and Delaware were much prized by Mr. L. for wine.

At Willoughby, Mr. Williams said, all the varieties had done quite well, excepting that Catawbas did not ripen fully, though in some localities the fruit was fair and saleable. He had a little vineyard of Concord that yielded a splended crop; over two tons of fruit from half an acre of land, and selling for $400 besides cost of transportation. Delaware and Iona did well where well cultivated and not allowed to overbear. Mr. Tryon's young vineyard, near Kirtland, on elevated clay soil, ripened a very fair crop of Catawbas, the best in that region.

At Mento, Mr. King's vineyard of Delaware ripened a full crop quite well, though the vines were overloaded the year previous. Catawbas did not ripen well.

At Painesville, Mr. Batcham said Catawba and Isabella did not ripen well, but the earlier kinds were quite satisfactory. He had some mildew on one or two varieties of Rogers' Hybrids and Allen's hybrid, but Delaware and Iona had done finely, also most of the Rogers varieties, with Concord, Hartford, Creveling, etc. He could say about the same thing of Madison, Geneva, and other localities beween Euclid, and Erie.

At Northeast, Mr. S. Griffith said, their young bearing vineyards of Delaware, Iona, and Israella had done finely, foliage and fruit quite free from disease. But they made a mistake in allowing too much wood to remain last spring, and too much fruit in the summer, consequently it did not ripen as early and fully as is would otherwise have done; still the result was such as to confirm the high expectations they had formed respecting those varieties.

Mr. Mottier of Northeast, said the earliest Catawba fruit, gathered just before the frost, was so well ripened that the must weighed 85 deg. Delaware ripened finely, must weighing 90 to 92 deg. Ives also ripened well. Iona on three years old vines, very good; must weighed 94. Approves it very highly; never tasted better wine.

Mr. J. J. Dunham spoke of the thirty acres of Salem vines, at Salem-on-Erie, one and two years planted. Never saw better growth; no mildew or injury from any cause. He felt great confidence in the Salem grape and the Salem-on-Erie vineyard. Others who had visited the place, and had elsewhere seen the Salem fruit, spoke very favorably of the vines and fruit, and referred to the fine show of that variety at the exhibition at Painesville last fall, where it gained the first premium, "quality to rule."

At Fredonia, Mr. Hubbard said Hartford, Isabella, Concord and Delaware colored well and sold well. Catawba did not ripen. Adirondac ripened before Hartford; Iona later than Delaware.

At Lockport, Mr. Hoag said grapes had done as well as usual the past season. Catawba was not grown there. Delaware and Iona first rate. His Ionas, 3d and 4th crop, yielded 10 lbs. of fruit to the vine. Thinks highly of Salem and of Rogers' No. 4, 30 and 34, also believes that Martha will prove valuable as a market variety. The vine is very thrifty, hardy and productive.

At Pittsburg, Mr Batcham said, he attended the Grape Show at Mr. Knox's, in October, where seventy varieties were exhibited on the tables, and on the vines, most of the specimens well grown and ripe. Twenty of these were Rogers' Hybrids, embracing nearly all the approved numbers, including Salem, (No. 22,) and making altogether the finest show of these grapes that he ever saw.. The consequence was, he had a much higher opinion than formerly of the Rogers' Hybrid grapes, and he felt like advising his friends to plant of the Salem and all the other leading kinds, at least by the way of experiment, especially where there was difficulty in growing the finer varieties, like the Delaware. and Iona. The Martha, too, is largely grown by Mr. Knox, who calls it the White Concord, on account of its great thrift and ability to withstand hardship. But the greatest glory of the Knox vineyards is still the Concord which he finds the greatest of all for yield and profit. Delaware and Iona do but fairly, being liable to fail somewhat in foliage. Creveling is one of his best early grapes, the bunches much more perfect than commonly seen elsewhere. Hartford and Ives also succeed admirably. Catawba not very reliable.

At Rochester, N. Y., the show of grapes at the State Fair was remarkbly fine. He was especially interested in the display of Rogers' Hybrids, grown by Ellwanger & Barry, larger bunches than Mr. Knox's and also a number of new seedlings grown by them and not yet named or disseminated. The Eumelan of Dr. Grant was also exhibited there, and impressed him quite favorably, the specimens being better than those exhibited at the Ohio State fair and at Cincinnati.



CALADIUM LEAVES
Grown by Penrose Fries Philadelphia

COLOR PHOTO

The Gardener's Monthly.

DEVOTED TO

Horticulture, Arboriculture, Botany and Rural Affairs

EDITED BY THOMAS MEEHAN.

Old Series, Vol. XI. *MAY, 1869.* *New Series, Vol. II. No. 5.*

HINTS FOR MAY.

FLOWER GARDEN AND PLEASURE GROUND.

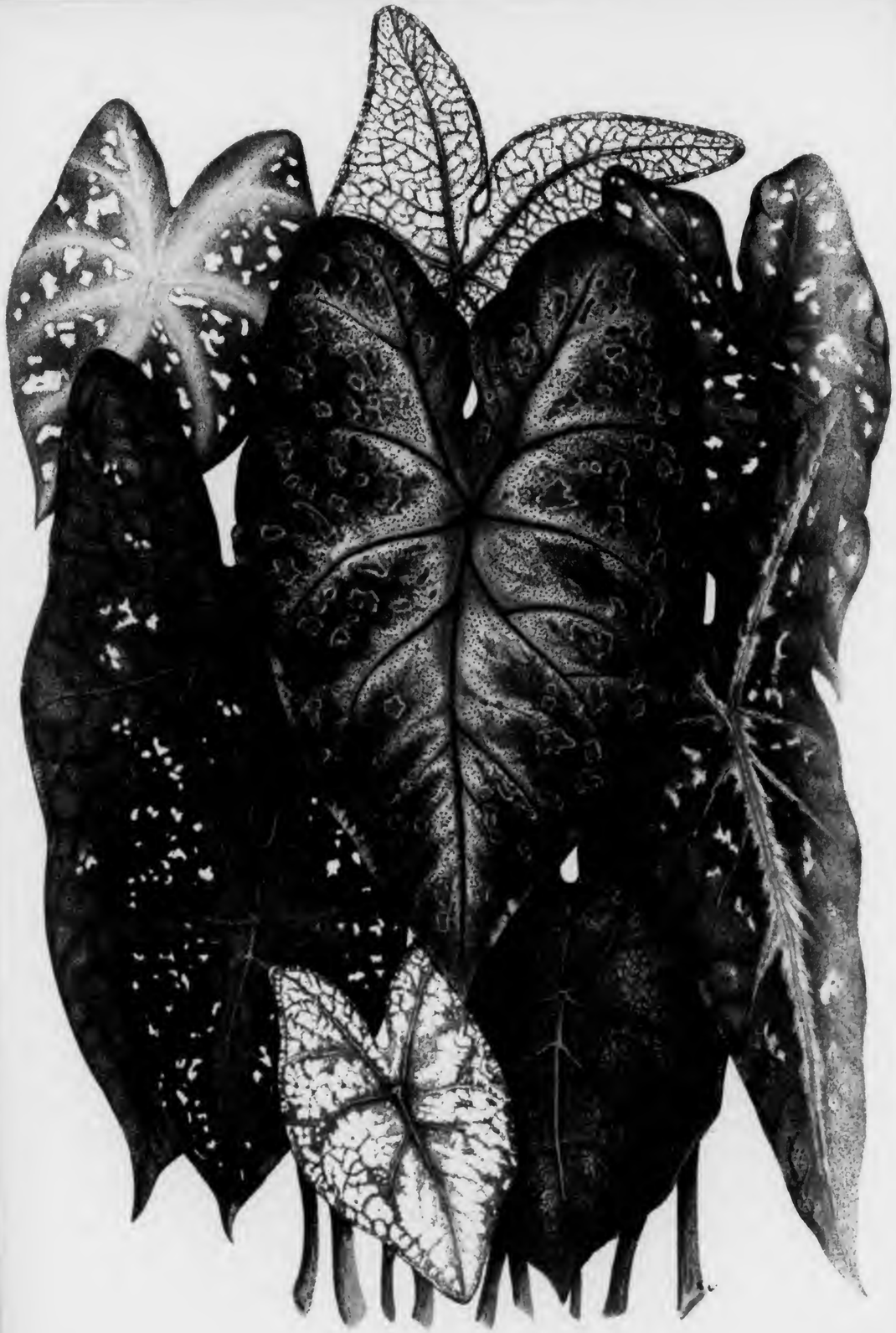
Why are not the class of succulents used more for bedding purposes? We do not mean that they should supplant flowering things of course. Succulents generally have no blooms adapted to cutting. Usually, in fact, they are very shy of blossoming; but they afford much varied form, and many of them have strikingly gay colors. They grow so well in our climate—asking no care—giving really so much in return for so little, that certainly we should make more use of them than we do. For vases, rock work, &c., they are almost indispensable. Amongst Sedums, Opuntia, and Mammillaria, are some quite hardy species,—so that winter or summer, they are self-supporting contributors to our floral pleasures.

Then again, the dwarf evergreens are not made as much use of as they might be; chiefly, because we employ them too sparingly. It is usual to plant them mainly for their botanical interest. We find persons pride themselves on having this or that rare thing in their "collection," just as the numismatist values his old coins; not for the use he can make of the rare penny, but because so few possess one. The real value of these plants is their capacity for adornment, and this is seldom brought out, unless they are used in groups or masses. It may be said that they are frequently too expensive to be used on a large scale; but it is the limited demand for them which keeps up the price. If one has not the means to buy them by the dozen at once, they may be increased on one's own ground. Almost all these dwarf evergreens root very readily by layers. A slit may be made in their stems near the ground, in June, and good rich earth mounded up about them, and generally they will be rooted by the next season. Some may be increased by inarching. Common kinds may be set against the rare ones. A little bark cut away from the stock, and from the kind to be inarched, and then the two cut places brought face to face together and tied with bark, woolen string, or any thing of that character, and they will be firmly united together before fall. Or they may be grafted on other things growing at a distance, by burying a small bottle till the mouth is level with the ground, at the base of a little plant to be grafted, fill it with water, then put a branch of the choice kind in the bottle, and tie together as in inarching, which it really is.

This grafting, inarching, and layering business is a very pleasant occupation, and affords much enjoyment to those who practice it. A very useful plant to practice on is the American Arborvitæ; a few hundred may be bought at very low prices; and on these little things may be grafted Golden, Siberian, Globe, Hovey, or others; even allied genera like Retinospora, Libocedrus, &c., take readily on it.

With a good stock of these things, they may be bunched or massed together, and very pleasing results attained. Some of these plants are usually sold cheap enough to by a large lot at once Of these *Pinus pumilio* is a good illustration. Some of the prettiest effects in the Central Park, are derived from it. Much of its value however depends on position; it looks best on mounds, or in rocky places.

Though we would not plant evergreens, as they are usually, solely for botanical interest; we would plant other things for this purpose. Beautiful flowers surely should afford some other pleasure, than that given by mere color, or elegance of form. The structure and beautiful arrangements, and the relation and adaptation of parts one to another, give a great field of enjoyment to the cultivator. In this respect the pretty wild flowers are often as well worthy of a place in our garden, as the rarest exotic. Strange as it may seem, these wild children of the forest



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INTENTIONAL SECOND EXPOSURE

are often found more difficult to civilize in our garden borders, than the introduced foreigner. They will even do better in foreign lands than in their own, as if nature had advanced and left them a long way behind. Yet if we humor them a little they do pretty well. They mostly want a partial shade in summer, and a soil which is never very wet, and yet never dries—what gardeners uderstand as a "cool soil."

The greatest mortality is in winter, when they get drawn out by frost. The best way to grow them is to have them in beds enclosed by box edging. This then retains snow, or leaves, and thus they have a covering something like the protecting leaves or roots of the forest, or waste vegetation of meadows or weedy fence rows.

In preparing flower beds, we often notice a mistake made in copying from European gardening. There is too much earth in them.

In planting out flowers don't take them at once from the hot house to the open ground, set the pots out for a few days in a cold frame with plenty of air, or under a tree in a sheltered place. Before turning them out of pots, water; and when set in the earth, press the soil very hard about the flower roots. If the ground be dry, the earth cannot be pressed too hard.

Don't make the beds very high, or the rains in summer will run off too rapidly. After smoothing the surface peg down the plants as much as possible so as to cover the surface soon. The plants also push out side shoots easier. Where small twigs can be had, split and double them like hair pins, for pegging down; where these are not at hand, small peices of bast mat or twine, doubled and dibbled in the earth by the ends, make very fine pegs.

In this climate, Hothouse plants often make noble bedders. The Chinese Rose Hibiscus, is a first class thing, making a gorgeous show all summer. The Geranium, also is getting immensely popular. The tree Carnation is also in much request. The Madagascar Periwinkle, rose and white, is also now often seen in beds and masses.

Climbing plants grow faster on trellis than left to themselves; stick them in as soon as the climbers are set out.

Deciduous trees can be safely transplanted after the leaves have pushed, and up to the first of June; but the new leaves must be taken off, and the young shoots shortened. In a few weeks they will push out a new crop of leaves. According to "natural laws" as laid down in the books, it would injure the trees very much; but after a ten year's observation of the facts, we do not find it hurts the vitality of the trees very much, while few ever die so treated. Evergreens seem to do better in May than in any other spring month. Of the newer evergreens, Thujopsis borealis, Cupressus Lawsoniana, Libocedrus decurrens, Thuja ericoides, are really good additions to our list.

Tuberoses, Gladiolus, Tigridias, Dahlias, and other bulbous things which cannot be put out till the ground gets warm, ought not to be kept out of the earth any longer than necessary. It was once supposed they thrive best in poor soil—an error; they love rich food.

Mow lawns very early the first mowing; or at every subsequent mowing, the lawn will look brown; a thin sprinkling of salt is good for the lawn, just enough salt to see the grains on the surface about a quarter of an inch apart. An over-dose will destroy the grass. Frequent rolling is one of the best ways to get a good close sod. When coarse weeds get in the lawn, hand weeding is the best remedy.

FRUITS.

With the month of May comes in the true fruit season, when we may expect to reap something for our labor. We commence with the strawberry and find it is one of the most certain of fruits to bring us some return for our care and watchfulness.

If we look back over the past century, we think this fruit really has improved a little. In a hundred years we have advanced so that we now have fruit a few days earlier, a trifle sweeter, a very little more productive, and just a fraction larger in size. One would suppose that if this is all, there must have been some very extravagant pretensions during this time, as regards every new variety that has been brought out. But, yet we think all this can be justified.

There is no longer any doubt but that Knight was correct in the view that varieties in time die out. Some may keep healthy a thousand years; others a hundred, and some not a score; just as they may happen to be endowed, with a strong or weak constitution. But that there is a limit to their existence is beyond a doubt. The newer varieties therefore, may not contrast with the older when in their prime; but in their decline they

show to advantage. New kinds therefore, is a natural law; not perhaps that we are to progress much; but really to keep ourselves from running behind.

To keep fruit varieties healthy we must watch every symptom of disease, and promptly check it. The strawberry particularly is liable to a disease called "burning in summer." This is a fungoid disease; it only propagates in a very high temperature, and the best guard against it is a partial shade.

Where a bed of strawberries is liable to this disease, the best plan is to have a few rows of corn planted at intervals across the beds, to guard against the hottest of the sun's rays.

The grape and the strawberry are excellent crops to have together for this reason; that the grape trellisses give a little shade to the strawberries, while the strawberries make a dry and cool surface, which is so much appreciated by the vine.

Where any spotted leaves appear on any plant, arising from mildew or rust, it will be well to pluck them off immediately. It will often keep it from spreading badly.

Watch all young fruit trees against bearing too abundantly while young, or the first season after planting. There can be no objection to the ripening of one or two fruits on a tree the first season of setting out, in order to test the kind, or to administer to curiosity, if the tree be otherwise growing freely. If little growth is making, no fruit at all should be permitted. It is a better practice to disbud or take out soon after shooting all shoots that are needless to the perfect shape of the tree, than to wait till fall or winter. The pruning knife need then only be used to shorten a branch in to where several branches are desired to push, or to induce a more vigorous growth from the pruned parts. In the gooseberry, raspberry and strawberry also, no more shoots should be suffered to grow than will be required to bear the next season.

Where water can be commanded, there is nothing so profitable as to well soak the soil about small fruits; first about the time that they have set their fruit. Much of the value of this operation, however, will depend on the nature of the soil. The advantages are least in a tenacious, and greatest in porous soil. It is said that an animal derives most benefit from food when it is hungry before it begins to eat; it is certainly so with plants. Water applied to soil already wet is an injury; and water never has so telling an advantage on vegetation as when every leaf is about to wither up for the want of it. A plant that never seems to want water is in a very doubtful condition in regard to its health.

In summer pruning or disbudding, it is also worth while to watch for shoots pushing stronger than others, and always take them out. This is the only way that shoots of equal strength can be encouraged in every part of the tree. This is particularly true of grape-vines. If a shoot once get the start of the others in strength and vigor, the others will gradually get weaker to the other's increasing luxuriance.

VEGETABLE GARDEN.

In the cultivation of garden crops, the hoe and rake, should be kept continually at work. Weeds should be taken in hand before they are barely out of the seed-leaf, and one-half the usual labor of vegetable gardening will be avoided. Hoeing or earthing up of most garden crops is of immense advantage in nearly every case. One would suppose that in our hot climate flat culture would be much more beneficial; but a fair trial, say on every other row of a bed of cabbages, will show a great difference in favor of the earthed-up plants. It would be easy to explain the reason of this, but in this column we try to confine ourselves to "hints," and leave reasons to our other departments.

CABBAGE, Cauliflower, and Brocoli, are now set out for fall crops, and Endive sown for winter Salad. Lettuce also for summer and fall use This, however, must be sown in very rich soil, and in a partially shaded situation, or it will go to seed. Peas, Beans, and other crops, should be sowed every two weeks. They do much better than when a large crop is sown at one time, and then have too many on at one time to waste.

Melons, Cucumbers, Corn, Okra, Squash, Beans, Sweet Potatoes, Lima Beans, Pepper, Egg-plants, Tomatoes and other tender vegetables that do not do well till the sun gets high, and the ground warm, should go into the soil without delay.

Bean poles should be set before the beans are planted; and near cities where they are comparatively high priced, their ends should be charred. This will make them last some years.

HOT AND GREENHOUSES.

"1st of May" is the usual time in this region, for putting out tubs and large pots kept under cover through winter, and used in summer for decoration of the grounds. Oranges, Lemons, Pomegranates, Crape myrtles. Pittosporums, Agaves, Aloes, and Sago palms are particularly employed for this purpose. Many are very much t oubled about repotting them; but unless very healthy, they are often injured by too much potting. It is safest to put a few inches of well decayed cow manure on the surface, and the watering will carry the nutriment down to the roots.

Almost all plants do better in the open air in summer than under glass; but with what are called hard-wooded plants, like Heaths and Epacrises, the dry heat of our climate does not seem to agree. A partially shaded place is the best for most of them, but not under the drip of trees, though many persons put them out under trees, as such shade with drip, is better than the hot sun. Plants are better also with their pots plunged into the soil, but they ought to be twisted around or taken up and reset about once a month; or the roots will so many go through the bottom of the pot as to injure the health of the plant when taken up and so many broken off at once in the fall. Azaleas usually flower better when plunged in the full sun.

There are some things which do well kept under glass all summer, as Achimenes, Gloxinea, Begonias, Ferns, &c., but it will be best to try to get as much as possible in the open air, in the first place because they are more enjoyable thus, in summer, and, in the next place, because they usually keep hardier, and clearer from insects, which are very hard to contend with, under glass, in hot weather.

COMMUNICATIONS.

BARTRAM'S DIARY.

BY J. H. L.

The perusal of the notes from Pursh's Diary, now publishing in your valuable *Monthly*, and the recent mild winter, have forcibly reminded me of my long-promised contribution to your columns, from the precious memoranda of dear old William Bartram. This "Calendar for the year of our Lord, 1802" opens with January 1, and runs nearly through the six following years, closing with Sept., 1808. It was recommenced January, 1814, and ran out 14th Feb. A wide hiatus occurs, and in January, 1818, he again observes and notes with spirit, and closes with December, 1822. Ten years of almost daily notes are thus embodied in this thick, old, brown, well-worn, octavo-post manuscript volume, which, devoted as they are, almost exclusively to jottings of the weather, arrival and departure of birds, appearance of insects, &c., are not without interest even at this day, though, I am sorry to say that, owing to almost total absence of thermometrical notes, —for it would seem the good man did not boast this needed instrument until 1803, and used it very charily for several years,—they are thereby shorn of much of the value they might otherwise have, for accurate comparisons with modern observations.

How patiently did this fine old man jot down his observations of the changing phases of dear old mother Nature he loved so well, and to whom he lived so near. Commenced in his 62d year, and closed in his 82d, the year before his death, they evince the strength and constancy of that affection for every living thing, which age could not chill, nor growing infirmities abate.

The first entry is a remarkable one:

Jan. 1st, 1802. "The weather serene and warm as in the month of May; after a white frosty morning; the fields and gardens green with growing vegetables; several species in flower, and abundance of insects sporting in the air, and birds singing as in the Spring of the year; frogs lively about springs. Wind South East."

"2d. Slight white frost: the day exceedingly warm and pleasant as yesterday. Wind S. S.W Spiders darting their webs: wasps flying about (Vespa annularis); the blue bird sings (Motacilla sidlis); evening calm and warm. Mocking-bird (Turdus polyglottus) not yet left us on his passage to the South."

"6th. White frost this morning, and some ice, but mid-day was warm and pleasant. Birds numerous, as Snow-birds, Sparrows, Wood-peckers-Golden-crowned Wren, Tit-mice Nut-hatch, Crows, Hawks, Blue-birds, Robins and an endless variety of insects."

"7th. * * * The Frogs whistle, the Sparrow-hawks scream." A storm appeared on the 9th, but on the "15th clear and warm as May-day. No ice to be seen in the river. Bees out till evening flying about. Sparrow-hawk and Blue-birds: Crocus verna, Narcissus, Snow-drop, and Tulip above ground. Hamamelis in full bloom. Wind S. W." The month continues mild with a few cold days near the close, and he notes on the "31st. Clear, pleasant and moderate weather. No frost; the field and pastures green as in spring, grass and grain growing night and day. Spring Aconite (Helleborus) in flower in the garden. Large flocks of ducks in the Schuylkill." * *

Thus passed January, 1802, at Bartram's Garden.

February was attended by her northern servitors, snow and northern winds, which did not however, chill the rivers so greatly as to prevent people from swimming in the Schuylkill on the 21st, as we find noted on that day!

"April 3rd. Peach trees begin to bloom." The arrivals of birds are here largely, noted, and the appearance of the bloom of wild plants minutely recorded in April and May.

Ap. 21st. Pears in full bloom, and apples beginning to flower.

"May 5th. A bull-frog swallowed a large mole instantly."

The mild winter of 1802 was followed by a Spring, described as "the coolest hitherto." "Vegetation almost suspended; esculent vines, such as cucumbers. melons, squashes, &c, that have come up, mostly destroyed by the cool rains and chilling air: all other kitchen vegetables much injured by the cold."

"May 31. Strawberries beginning to ripen."

What an advance in horticultural knowledge and wide extension of the culture of this plant is suggested by this simple entry of the ripening of the few strawberries even skillful William Bartram could command, nearly seventy years ago! A few hautbois or scarlets were, perhaps, all he could produce, and these diminutive specimens—though as respects the latter, flavored as are but few of our boasted monsters.

Very frequent entries of dates of bloom of many wild plants appear, proving a close and interested observer and industrious recorder. Such notes sometimes cover an entire page for one day. His remarks on insects are peculiar and minute: thus, on "July 7th, Grasshoppers begin to *screep* in the evening."

"July 9th. Many cases of Yellow Fever in the city, said to be brought in a vessel from the Isle of St. Domingo."

"July 23. We have a plant of Lilium superbum in the garden, the stem of which is upwards of eleven feet high, terminating in a pyramid at top, composed of 32 perfect flowers, and exhibits a truly superb spectacle."

"Aug. 7. Malignant fever rages in Philadelphia and Baltimore. * * Fever ceased middle of November."

"Dec. 31. Pleasant day; no ice in the Schuylkill. Wasps flying, and moles throwing up earth, and Frogs in springy places. Dracontium fœtidum above ground."

The summer of 1802 does not appear, from the notes, to have exhibited any unusual extreme. With this remark, we close, for the present, this record of patient observations, which recalls the eulogy of Coleridge, on reading our botanist's "Travels in North and South Carolina and Florida,"—"It is a delightful specimen of the enthusiasm with which the lover of nature, and particularly the botanist, surveys the beautiful and wonderful productions scattered over the face of the earth."

More anon.

NOTES FROM LOUDON CO., VA.

BY J. G. R. K.

Should any readers of the *Monthly* be fond of variety, I would ask them if they ever saw the mellow tinted Crocus presenting its golden chalice at the shrine of Flora, and at the same time, the Frost King binding, in icy fetters, the crystal fountains, till they could, standing on the iceberg, gather a vernal nosegay.

This is no ideal phantom; for, to-day, March 8th I have ice 3 inches thick, to fill my ice house, from a mill-dam, where the water had not flown more than 3 miles from the farthest mountain spring, and perhaps one-fourth of it not more than half a mile.

In my garden, the Crocus, Snowdrop and Jasmine are, or were, in full bloom. The bees had been busy among the tiny flowers of the chickweed. The Apricot and Peach seem almost ready to burst into bloom.

Can we have any fruit after such weather? I have not had time to day to examine the buds; but a few days ago they were all alive and fresh. The weather, during most of its recent coldness, has been dry. We have had one or two conside-

rable white frosts, which have told on the hue of the evergreens.

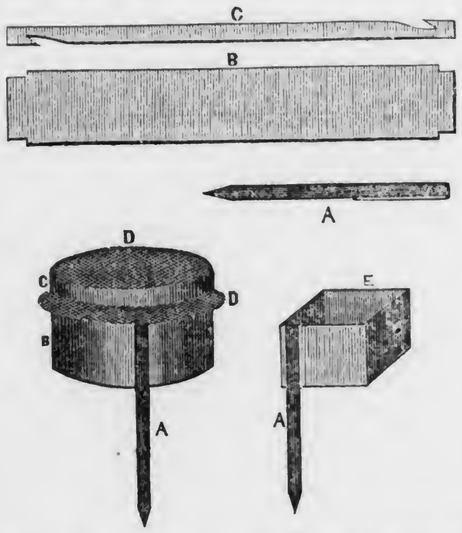
The Cryptomeria japonica is surely a very sqeamish evergreen; for it had browned in the early part of the winter, and some of the more tender branches were killed. And, notwithstanding all the fine balmy weather we have had, it has persisted in looking brown and lifeless; while the Yellow Jasmine vine, just a rod from it, has not lost a point, but is fresh and full of bloom now.

I should like to gossip frequently with the fraternal readers of the *Monthly*, and hope, some time, perhaps, to have the leisure to say a word now and then in season.

PLANT PROTECTOR.

BY B. L. RYDER, CHAMBERSBURG, PA.

I herewith send you model and description of my Plant Protector, for guarding squash, melon, cucumber plants, &c., from the attacks of the Yellow-striped Bug, the Black Flea Beetle, &c.



The Plant Protector consists of a hoop iron stake, shown in the cut at A, which is bent round at the top so as to form a long loop, into which are fastened both ends of the veneer B, formed into a square box, as at E; or, bent round like a hoop, this box is set over the hill containing the seeds or plants, and the arm of the stake thrust into the ground, to prevent its being blown off by the wind. A square of millinett, or fine mosquito bar netting, D, is thrown over the top of the hoop or box, and the hoop C hooked together and put on like the rim of a box lid, which fastens the netting, and completes the Protector for use.

Thus the plants are perfectly secure from the ravages of insects, as well as protected from cold winds, until sufficiently strong to endure the open air. When the plants have made their fourth leaves, the striped bugs seldom attack them.

Protecting plants in this way is not an original idea, having seen, and practised, the same thing for many years, by tacking the netting over wooden frames or boxes. The improvement consists in the employment of a very cheap and portable arrangement—so cheap and convenient, as to be within the reach of, and a necessity for, all gardeners and truckers.

Scores of the manufactured article, ready for use, can be packed in a small box, and taken to the field or garden, and put over the plants; and when no longer required, can all be taken up and packed away until wanted again; and, with a little care, will last a number of years.

As I suppose every one is entitled to some benefit for his ideas, I have filed application for a patent.

PURSH'S JOURNAL.

(*Continued.*)

20. To day I took the excursion to Sqr. Geddes, & intend to go from there across the country to the Saltpoint again.—The Viola circæifolia P. as mentioned in the beach woods, is yet in flower here: I observed all above before mentioned plants on this route & the remains of Sanguinaria. The Carpinus Ostrya is calld Ironwood here & sometimes Leverwood—the Carpinus Americana is in common Waterbeach.—In a swamp near Mr Geddes's the Cupressus thyoides grows In a Hemlock wood—Pyrola rotundifolia & Orchis bifolia.

Mr Geddes brought me to a deep valley about 1. m. from his house, where we ascended a steep very rocky hill; here large masses of rocks seem to be piled up, or tumbled over one & another in such a confused manner, that it has left large chasms between them, which sometimes appear like caves: as it has a north aspect & overshadet with trees, all the rocks are covered with moss and vegetables: & I suppose this must be a very interesting place for the botanist in the spring, the walking is very precarious, as in some places large holes are hid by weeds & bushes, & every step, one is in danger of break ing a leg or falling into a gulph.—Here I found plenty of Actea spicata, chiefly with red berries, but some of the plants had beautifull white berries, looking like waxwork.—This is the Red & White Cohosh: the blue Cohosh likewise grows in plenty here: Xylosteum tartaricum is in abundance, Ptelea trifoliata, Geranium Robertianum, Lonicera glauca, with very narrow leaves, Taxus baccata or procumbens calld Ground Hemlock—Polypodium Dryopteris a species of Clematis seemingly new to me. Satyrium repens—Circæa alpina—Chrysosplenium alternifolium—Pyrola umbellata in flower.—Arum triphyllum, Asplenium rhizophyllum & what I thought the most of Asplenium Scolopendrium—this fern which I dont find mentioned by any one to grow in America I allways had a notion to be here; & indeed I was quit enjoyed to find my prejudice so well founded in truth. It appears to be the same as the european, only smaler; query? is the europaean auriculated at the base like this species?—The Choak cherry is in plenty on these rocks & another species of Prunus—A species of Urtica or Boehmeria, which I got from Virginia in similar places likewise.—In going towards Mr Geddes' house again I observed a Ranunculus which I call R geoides. Dirca palustris, grows here likewise. On the old rotten wood I observed a very singular Clavaria.—I stood this night at Sqr. Geddes.

July 21—After breakfast I set out from here to Saltpoint;—On the road there I observed nothing but what I have mentioned before: Along road sides in general here Carduus lanceolatus,--Verbena hastata—Cynoglossum officinale & parvifolium. Myosotis lappula—Verbascum Thapsus—Polygonum Persicaria,—Anthemis Cotula &c. cover the ground. at the Point I crossed the mash, to visit the banks of the Lake—here I observed Potentilla anserina—Stachys spec.—Sisyrinchium bermudiana: Cornus albida.—Viburnum Opulus calld Cranberry tree—Plantago major—Teucrium canadense—I think this is materially different from T. virginicum—Solidago odora-Galium floribus ochrolucis, petalis acuminatis—a very tall species of Scirpus—& several other plants mentioned before. In my return I found some more of the unknown plant, which looked like Lythrum verticillatum—it had flower buds in the axillis, which by dissection showed plainly to be Lythrum, & I suppose that very species I supposed.—

On the shore of the Lake I visited, several salt works are erected, which are supplied from the main works with water, which is carried for that purpose about 1½ mile. As it was late when I returned to the point I stood there over night.

July 22. Returned to the Hollow where I examined & dryed those plants collected the last two days.

23 } —It being rainy I was confined to the
24 } house, writing, drying plants &c.

25 Made an other excursion to Salt point. As I observed nothing new through the swamp & marsh, I went on to a place calld Ireland or Liverpool—Here they have Salt Springs on the edge of the lake, most of them covered by the fresh water of the lake; there are about 150 kettles at work here: The shore of the lake & the bottom near the shore consists entirely of a white calcareous mud, which in some places is tolerable hard; this sediment is formed of disorganized shells & snails & is the same process as, I suppose, by which in times of old our present limestone beds are formed: I sometimes thought it would be more common to see petrifaction or impressions on the limestone, as it really is, if it had been formed this way, by the sediment of discomposed shells & snails; but since I have seen nature going on here, in a manner demonstrative to the eye, all my doubts are over: this sediment in some places especially a little below the surface is such a complete pap of lime or calcareous earth that it wants nothing else, than the draining of the lake, to form a very solid bed of lime stone I think in a very little time.—Observed nothing new in flower to day, except the Cimicifuga serpentaria, a species of Helianthus, very common & Ceanothus americanus.

July 26. Spent the Sunday in the house having only this morning returned from Salt point, very much fatigued.

27. Was bussy among the specimens I expected to day a letter from Dr. B. but was disappointed again.

28. Having contemplated to go & visit Oswego & the lake Ontario, as I dit not find it well to spent so much time without having some thing more interesting than to see the same thing & same places over & over again: but I was disappointed by rain consequently kept close house.

29. It looking likely to get fair again I set out for Oswego: when I came to the Salt Point I concluded to go down, with one of the boats which steady go from here in the Salt trade; but waiting

& waiting for one to go, I was obliged to stay over night on the point.

30. No boat being ready to go this morning, I took my way on foot as far as Liverpool 3. miles, the road was good & I was acquainted with it: here I took breakfast: & from here a path beginns, cut through the woods, leading down the river to Oswego: I observed Gerardia flava & Helianthus squarrosus in flower:—After getting rightly into the path, I found the woods in respect of timber & vegetation as well as in respect o bad miry road similar to the Beach Woods: The land is springy and very rich; the path sometimes comes close to Seneca river & sometimes is pretty distant from it: the travelling exceeding fatiguing having to go for several rods round mire holes, to find a place to cross, & then to look with all precaution to get in the right path again: it is very seldom travelled, & in some places so blind, as if never a man had went that road. Dalibarda violoides I found yet in full flower; the flowers are exceeding handsome & neat.—I observed a Jungermannia not noticed before.—Specimens preserved.—Nothing new.—After a tedious journey, I came to three Rivers point.—This is a beautifull place—but only one house, who keps tavern near it—here I took dinner. Seneca river from the S. W. & Onondaga River or the outlet of Oneida Lake from S. E. come here together nearly at right angles & form the Oswego River to the North.—Finding company at the tavern, in a man who was going as far as Oswego falls, with a couple cattle, having lately removed to live there; I undertook to take it through with him, through the distance of 12. miles in such bad road, at so late an hour, was rather more as I should have undertaken without it. After crossing Oneida River or as they call it Onondaga river which I think very wrongly. I ound plants of Anona triloba, the first I seen this season; Crataegus Crus-galli is very frequent here, & varies in the shape of its leaves most wonderfully, according to the more rich & poor or wet & dry soil it grows in;—I had to drudge on as well as I could since I once had undertaken to go along; the man who drove the cattle was on horseback, but walked the chiefest part of the way, as it was almost as tedious to write, as it was to walk.—We liked to be overtaken by night, but were luky enough just to clear our distance; when we came to the falls, which are but very small, I had to go a mile farther to come to a tavern at the landing place below the falls, the man who had moved there was in a situation not able to accomodate me; But though it was dark I had the comfort of a good road, as all the salt is here carried from the head of the falls, to this landing by carts. At the landing I took up lodging for to night; being in a manner almost worn down with fatigue.—I collected to day the round leaved variety of Veronica serpyllifolia.

(To be Continued.)

THE CHINESE YAM.

BY W. R. PRINCE.

I perused, with regret, (in the March number of the *Monthly*,) your comment at the conclusion of my article on the Chinese Yam, in which you refer to facts that occurred ten years ago, when we had but the one very long variety of this esculent. I had supposed you to be *au fait*, and that you had full knowledge of all the new varieties introduced since; and as I specially referred in my published article, to these, and to the fact that there are more than fifty varieties, of every form and of various colors, described in th Chinese works.

I cannot realize with what justice your remarks can apply,—as the most of these varieties grow only 3 to 4 inches under the surface, and require only slight and trivial labor to dig or hoe them out.

I will now add to my former communication, a few points which I deem important to the cultivator.

As the root is perfectly hardy, the crop may, when so desired, be allowed to remain in the open ground during the entire winter. A field appropriated to this esculent does not require replanting annually, but will renew itself from the small pieces of roots and the tubers which are left in the ground,—in the same way as with our Horse Radish fields.

In China, a field of this esculent is called "A Magazine of Food," and it is ready for use at all seasons; and fresh Yams (the same as new potatoes) are dug for regular family supplies as often as required.

The ordinary product from tubers or sections of root, is 40 to 50 fold in increase of roots and tubers. John Raynor, of this county, grew, in two years, from ten tubers, a total of 2650 tubers, and 169 large roots, valued at $450. I have recently received the following letter from Charles Downing, who had long previously expressed his

encomiums on this Yam, and had expressed his amazement that its general culture had not been adopted.

"*Newburgh, March*, 1869.

Your favor is before me. I have nothing to add to my former views of the Chinese Yam. It is still free from disease; perfectly hardy, remaining in the ground during winter; very productive and, to my taste, equal, if not superior, to every potato I have seen. I find the quality of those of three years' growth much better than those of one and two years; and at this age they often weigh eight, ten and twelve pounds each.

CHAS. DOWNING."

I have also received a letter from F. R. Elliott, of Cleveland, Ohio, in which he makes the following comment: "I note your remarks about the Chinese Yam, and only wonder our people do not take hold of it. Once understood, the Potato would be nowhere. Downing and I talked of it, and as he has grown them, he coincided."

In conclusion, I feel very positive as regards the future of this esculent for all northern countries, as there exists another great advantage:—we can grow an interminable number of varieties from seeds, and thus acquire such new ones as will suit every region of the Temperate Zone, in both Hemispheres.

[Mr. Prince has caught us in ignorance. We had no acquaintance with any lateral growing varieties: Such kinds would make this a very desirable vegetable.—ED.]

CALYPSO BOREALIS, SALISB.

BY H. W., OTTAWA, C. W.

If Canada cannot vie with Brazil or the Eastern Archipelago, in the beauty of her flora, she can, from the depths of her vast forests, produce gems which, if they do not impress us with their grandeur, at least charm us by their simplicity.

Hidden under the shade of the Cedar (Thuja occidentalis,) and the Balsam (Abies balsamea), or clustered around the roots of the Tamarac, (Larix Americana), in the mossy swamps of the Canadas, may be found many very beautiful representatives of the Flora of North America.

Foremost amongst these, both on account of its beauty and its rarity, stands the *Calypso borealis*, one of the most delicate and graceful of the Orchids. This plant is said, by Pursh, to be found in Nova Scotia and on the banks of the Columbia River; by Hooker, in Nova Scotia, Hudson's Bay Territory as far west as the Rocky Mountains. Torrey and Gray, however, (Nat. Hist. State of New York,) only mention three places in the United States where it has been collected, namely: Jefferson and Lewis Counties, in the State of New York, and the State of Vermont (locality not given); so that, with a habitat almost co-extensive with the continent of North America, north of 40°, the Calypso may be said to be a rare plant.



The writer of this notice has only found *Calypso borealis* in one locality, and there the plants are chiefly confined to a small hollow, of a few yards in diameter; and it is, perhaps, worthy of notice that, whilst Professor Gray and others state that the Calypso is found in sphagnous swamps, the spot in which it was found by the writer is a slight depression on the top of a lime-

stone ridge, (the highest ground in the vicinity, sparsely covered with White Pine.

The plants were grown in turnovers, as they are commonly called in Western Canada; that is, in the holes caused by the tearing up of the roots and superincumbent earth when forest trees are uprooted by storms. The leaves of the Pine having collected in these holes, and decayed there, have formed a rich vegetable mould, covering, to a depth of five or six inches, the broken fragments of limestone left in the hole.

The Calypso would seem at least as well worth cultivation as the Cypripedium, which may frequently be seen in the greenhouses and gardens of amateurs. But, probably, the trouble of collecting the plants may be a serious obstacle to its introduction.

FORMULA FOR PLANT DESCRIPTION

BY J. W. L., PHILADELPHIA.

Having found that a printed form, such as I herewith enclose, proved, last year, a great aid in the systematic study of flowers, I have thought that those of your readers who are botanically disposed, might derive a similar advantage from using it.

After the student has identified a flower by the Manual, he can make a permanent record—without necessarily copying the phraseology of the book—of each part thereof, as well as of the leaves and stem; and, if he possesses a good microscope—which is an invaluable collateral help—the appearance of the pollen, tissue, and similar items not cognizant to to the unaided sight, may be also noted. The memoranda may be primarily made in pencil, and upon a subsequent re-analysis in a following year, the pencilling can be written over with ink; noting, at the same time, in their proper places, any additional peculiarities that may be observed, or making record of such upon the back of the form.

As an example, I have made a transcript from my own notes of the analysis of (nearly) the first "wild flower" of spring,—a visitor, by the way, much maligned on account of the peculiarity of its fragrance; but possessing, with its purple hood, a blossom both unique and beautiful.

Touching the expense, I may mention that 500 of the forms—the printer supplying the paper,—cost but $2.50; the binding of 300, for 1868, (lettered on the back, "Floral Analyses, 1868," cost 60 cents.

[To be bound together at the top.]

Date, April 9, 1868.

Name,— *Symplocarpus fœtidus*, "Skunk Cabbage."

Order—cxii, Araceæ.

Locality—Edgely; marsh.

Roots,—Numerous and coarse, deep in the ground.

Stem,—An herb; smooth, rank, smelling.

Leaves,—Coming somewhat after the flower; radical, smooth, entire, ovate, becoming very large; convolute in vernation.

The spiral tissue is present in large quantities, as shown when the veiny structure is torn apart.

Flowers,—On a globose spadix, which is shielded and nearly concealed by the hooded spathe,—the latter purple, yellow, or green-streaked or spotted.

Sepals—4, hooded.

Petals—None.

Stamens—4, opposite the sepals. Fils white, flat; anths. extrorse, 2-celled. Pollen pointed, elliptical.

Pistil—1; shorter than stamens, only the tip of stigma being visible; fleshy and 4-sided.

Ovary—

March 14, 1869.—Spathe protuberant above ground at Edgely.

March 19, 1869—In flower at Edgely. But an inch or two only of apex of convolute leaves yet visible.

Noted a deep purple variety of spathe entirely *unstreaked or unspotted without or within.* Not mentioned by Gray or Wood.

Under the microscope, in the expressed sap from midvein of the thick, out-most leaf, were what appeared to be short, linear crystals, though they may have been young, detached cells of the woody fibre. (?)

EDITORIAL.

THE CHANGED CONDITION OF AMERICAN GARDENING.

It cannot be denied that of the great mass of first-class European Gardeners which come to our shores, the larger part fail. They either find no places to suit their ideas, get dissatisfied with the way they are treated, or get their employers dissatisfied with them.

What we call "second-class gardeners" on the other hand, are those who succeed very well. Very many of our best places ultimately fall into their possession, and most of our successful nursery and seedsmen, landscape and jobbing gardeners are recruited from their ranks. There are some few exceptions to this, but it is generally true.

It is the part of wisdom to recognize facts, to study out why they are as they are, and to govern ourselves accordingly. Merely regretting that "gardening in America is not like what it is in the old country," or exclaiming that "Americans dont know how to tell a good gardener from a bad one, does little good;" it is best to find out really what is wanted, and govern ourself accordingly. Why should it be that a thoroughly educated gardener should not do as well as the inferior article. There is no reason—no real reason—nothing but his want of appreciation of the facts.

There is one thing which should particularly strike the new comer, that Americans seldom feel so much at "home" as Europeans. The great hope of the latter is to get leisure—to "retire and live like a gentleman with nothing to do." The American mind, on the contrary is cast in ceaseless activity. The man with "nothing to do" is rather despised. The American gentleman as a rule works far harder than those whom he employs. Bent on developing the resources of the country, he needs money; for its own sake he cares nothing for it. No one is more lavish or profuse in his expenditures when he has it, than he. But, not knowing when he might want to command his whole means in some great enterprize, he hates to lock it up where he could not readily get it if he wanted it. He is ready at any time to sell out house and home "if he can get a good price;" hence, even in planning his domestic arrangements he keeps an eye on making a saleable article. The larger and the grander the house and grounds, the fewer would be the number of bidders in case he wished to "realize;" hence very few build such places. Even where these large establishments are founded, the owner frequently finds himself in a "tight place" in money matters, and the garden becomes a source rather of trouble than delight, and an annoyance to the excellent gardeners engaged on them.

The great field for first-class gardeners who come to America, is therefore, not here. They should abandon at once all idea of grand places, with high wages, and little to do. It is in the nursery, the florists' greenhouse, the seed store, and the fruit garden; in laying out country seats, parks and grounds. First-class men are wanted in these fields by the hundreds, and after that there is room for more, and more.

We never have men come to us with their pockets filled with testimonials from the Vicar of Wakefield, the Duke of this, or the Earl of that, but we pity them. Had they been from such men as Rivers, Booth, or Leroy, showing that they had been a few years with them, and had mastered *their* business in "all its branches," their good fortune would be secure.

It may be right or it may be wrong, we are not going to argue that here, but the *fact is* and always will be, that the American gentleman will to a great extent be his own gardener. The one he employs ranks practically as little more than a foreman; and that independence and pride in "knowing his business," which has thrown so much glory around the European gardener, and made his profession rank with the Lawyer, Doctor, or Clergyman, is gone forever here. We feel that this is so, with sadness. We would like to see those majestic establishments—perfect in every department of the arts—patrons of every thing great and glorious in horticulture, still live. We should like to feel that all this should not, like the ancient palaces and castles, also pass away.

But we are consoled by the fact that all is not lost with these. That gardening itself will not pass away. Its principles are innate with humanity. It will ever be a passion with mankind; but like all earthly things, it must progress into

new forms and new channels, flowing into new and perhaps higher fields of glory of which even the great gardeners of the past have never dreamed. Even now we are in this transition state. The flood-gates of the past are breaking away. Drifts from new lands are washed along our shores. Those gardeners now will be most successful who note well these signs, and like Columbus of old, launch boldly into the ocean, and go in the way the drift marks show to them.

THE RED MAPLE.

It is somewhat strange that such a beautiful tree as the Red Maple is not more often seen in ornamental planting. The rage for fast growing trees has blinded our people to real beauty. If this barbaric taste increases in the ratio it has done, there will be small chance of little women marying, no matter how attractive they may be. Only the coarse, which grow up like the gourd of the Ninevite, in a night, will have any charms in they eyes of man.

But as in most such cases, a depraved taste usually punishes itself; so in thus giving the Red Maple the go-by because it is slow, those who thus despise it know not what they do. For this tree, though it may not shoot up with the rapidity of a Poplar, or grasp out all around as greedily as its twin brother the Silver or White Maple, yet it grows faster than most trees which happen to be more popular than it. Certainly it grows as fast as an Ash, or a Linden, and compared with a Horse Chestnut, it is like running a Norman Horse against Dexter, or some famous Arab Steed. Indeed if we had to divide all the trees into two classes, the fast and the slow, without any intermediate kind, we should have to put the Red Maple with the fast growing trees.

But we have heard the objection made that the Red Maple only does well in swamps—is indeed *the swamp* maple, and that it is no use to plant it in dry ground. It is chiefly because of a discovery we have made about this, that we thought to write this article. We like our readers to have continually the benefit of any new Horticultural discoveries. It is much pleasanter to us than to be repeating over and over again what some Jonathan Oldbuck discovered some hundred or two years ago.

It is a fact, that the Red Maple (*Acer rubrum*), is almost always found in swamps or wet shady places. Very rarely do we find it in its native places in dry or high ground. But in our explorations through the country, we have often wondered why it was that whenever we did find a Red Maple in these places, it was always healthier, more vigorous, and every way finer *than when growing in wet lands.* It really did seem as if nature had made a grand mistake in making a tree seem to prefer a situation in which it certainly did not do best. It was generally found in a wet place, but evidently did not like it. We pondered on this, as the occasion offered for many years, in the hope to fine some clue to it; but only recently have we found the key to the mystery, and it is this:

In our experiments in seed raising, we have had more difficulty in sprouting Red Maple than in almost any thing else. If we covered the seed but a quarter of an inch, it would rot before it came through; if we put it nearer the surface, it would dry up and never sprout at all. At length we found that by sowing it on the surface, beating it down with the back of the spade into the moist earth, and then covering thickly with very small brush-wood, so as to keep the surface of the seed-bed moist and dark, they grew nicely; and when sown *on* a box of earth and put under a dark and damp greenhouse stage, they grew prettily enough to delight the heart of the most cold-blooded propagator.

We suspect our readers now begin to see into the mystery of the locality question. Trees cannot be found often in dry or open localities, *because the seed will not germinate there.* The trees really do not want to be in the poverty and wretchedness of a swamp, but the great fiat of nature has gone forth—go there, or die!

There seems to be in all nature as well as amongst man, those which are to toil in hovels, and drink of the brack waters of misery—not that it is best for *them* to do so, but in pursuance of some mysterious optimism which human reason cannot fathom.

This great lesson of the Red Maple, should lead us into many Horticultural truths. One which it would strongly inculcate is not to be led away by the foolish cry of "follow nature." We should use rather our reason and judgment; our eyes and our brains. Nature has her mission to fulfil, and we have our objects to gain. We see and know that nature does *not* do all for the best, for our purposes, whatever she may do for her own. And so whether in cultivating fruit trees, or in growing Red Maples, we must learn from our own lessons rather than from hers.

Seeing then that the Red Maple is not a slow grower, and is not by preference a swamp tree, all that remains to it are unquestioned beauties. It has a charmingly regular form. There is no tree which so admirably combines the usually opposing characters of vigorous strength with graceful gentleness—the Elm not excepted. For in this last, there is too often an absence of that gradation which we like to see, to make "harmonious unity" as our grape friend would say. In other words there are not enough main branches to proportionate fairly with the numerous small branchlets, which ever delight to push out like parasitic Mistletoes along the huge stems. The Red Maple has great advantage here; and at this season, clothed as most of them are with its rich colored opening blossoms, it is a picture only after its own kind.

We have now another lesson which we can teach our readers in a few lines, but which it took us many years to learn. One of the greatest beauties in the Red Maple is that of its leaves turning to such beautiful colors in the fall. Some are of the richest crimson, but others are of only a tawny brown. Of course those which have the most dark glowing crimsons are most highly esteemed, but no one know show to choose them; when they are in leaf they seem all alike.

So far, the only course has been to mark them just as the leaves are falling. Now it will be found that amongst the flowering trees in April the shades of color are as varied as the leaves. Some are almost green, others a foxy brown, all the way up to the deepest crimson. *Those which have the darkest flowers in spring have the deepest hued leaves in fall.*

The Red Maple flowers quite young; usually most of them eight feet high, will show bloom in the nursery rows, so that any one with the *Gardener's Monthly* before him need not henceforth wait till fall to select his crimson leaved maples; but go on with the other things, in the regular planting time.

WILLIAM ROBERT PRINCE.

In our present number we have an article from Mr. W. R. Prince, on the Chinese Yam. Mr. Prince had received much abuse in connection with the introduction of this root. As in many similar cases it always seemed to us that the prejudices which may or may not have had a just origin, were blinding the public to the real merits of this root, and on the principle which we have evenly adopted for our guide in the management of this journal of strict justice to all, we have always allowed him a hearing. This ever seemed a source of pleasure to Mr. Prince, and but a few days ago, from the time of penning this sketch, we received a very pleasant note of thanks for what he regarded as a "chance to be heard in his own defence, which had been denied him by other papers." To day the mail brings us news of his death, and we feel that with all his excentricities, full justice had never been done to his real worth to the Horticultural cause. For our part we feel that if any one has had a right to complain of Mr. Prince's harshness of manner it should be the writer of this. He had to breast for a while the full strength of Prince's vigorous pen. Yet we have never allowed ourselves to feel otherwise than that under this rough exterior, much that was really valuable remained.

We now have notice of his sudden death, on the 28th of March. He had been in perfect health the night before, engaged as usual in writing. His father, William Prince, was the founder of the Linnæan Nurseries, at Flushing, probably the oldest of any existing, and in connection with these W. R. Prince has been known for nearly fifty years. In 1827 he distinguished himself in a controversy in Loudon's *Gardener's Magazine.* Some Philadelphia florist had attacked him, and and he defended himself in a manner which lost none of its force during his life. In 1830 he pub- his "Treatise on the Vine," unquestionably the ablest work on the subject yet published in the United States. Then followed (our copy is the second edition published in 1832) "Pomological Manual," dedicated to the Massachusetts Horticultural Society. This is a description and history of all the fruits cultivated in the United States, in a very similar style to that adopted by Downing. A great amount of labor has been bestowed on this work, and were such an one to appear in modern days of bookmaking, the author would achieve high prominence.

As a nurseryman, Mr. Prince did not maintain the reputation of his father. Other establishments became far more popular than the old Linnæan Nurseries. He failed in business soon after his accession thereto, and went to California during the height of the Gold excitement. While there he did not, however, neglect his favorite studies, but acquired an excellent knowledge of the trees and plants of that region. He returned subsequently to the family home, and

made great efforts to retrieve the Horticultural fame of the nurseries, with but indifferent success. We have often been astonished at his remarkable knowledge of things. In his correspondence he would refer to trees growing in particular spots or places, describing exactly where they could be found in many parts of the Union,—places where we are sure he never visited,—and which he could only have known of from casual conversation with others, and yet almost always we have found the information accurate.

His spirit was particularly a combative one; and like all such raised opposition, which in its zeal to "put down Prince," was not over nice in its weapons. He may have made exaggerated statements at times, but we know that some who have disputed them, have proved far less worthy of credit. Indeed it is a remarkable fact that in most of his controveries he came out victorious, far oftener than his contemporaries had any idea of. His peculiar style seemed to obscure the real facts. A remarkable instance of this occurred at one of the Pomological Conventions in New York. A "new" seedling Cherry was brought forward, and pushed with grand flourish. Prince at once pronounced it an old variety, and *gave its name*. This raised a great storm against him, but he insisted that it was one "imported by his father." The discussion brought out where the tree was growing—somewhere in the East—when he immediately asserted that *that tree* must have been the *originally imported tree*, which, to prove it, he said was "one worked on a Mahaleb stock." We believe Prince was cried down, but that "new seedling" cherry was afterwards found to be really growing on the stock as described.

Of late years he gave up most of his time to "Spiritualism," and the preparation of patent medicines, occasionally writing to us on some horticultural topic. A few years ago, after recieving some of his articles, which with all our desire to deal liberally with our correspondents, we could not pass for publication, we gently hinted in our pages that our readers should deal gently with Mr. Prince, as age had probably somewhat impaired his intellectual faculties. From this date he seemed to delight in frequently writing to us to show how much work he was doing, how strong he was, and the great things he yet proposed to do. Now arguing some disputed point in his Spiritualistic enthusiasm, now referring to the great fortune he was steadily amassing in his new medical sphere. On the last point he always insisted that he did not care for the money for its own sake, but he wished to get together enough to found an immense Orphan Asylum, which should bear his name. He died of apoplexy in his 74th year, yet in the feeling that he had many more years allotted to him which his great vigor, in the natural course of things, might seem to justify.

In many quarters he was so unpopular, that we suppose his death will be passed over in a brief newspaper paragraph; but feeling his memory deserves more than this, we have taken upon ourselves to do justice to his good deeds, leaving to others any other portion of the task.

SCRAPS AND QUERIES.

DR. STAYMAN'S ESSAY.—*Mr. F. Muench*, in the *Journal of Agriculture*, has a few words to say on Dr. Stayman's essay, published in that excellent magazine, and our own paper. Mr. M., introduces his article by observing:

"Just as the human skull was changed gradually from the ape-like form—which it had, perhaps, a hundred thousand years ago—into its present refined shape, and as *man* has by and by from his original brutal state been developed into the thinking and moral being he now represents,* so whatever of nature's works man takes under his fostering hand, appears to unfold new qualifications and accomplishments. Hybridization is by no means the only way to attain the object."

The asterisk refers to the note by the Editor.

*"Our readers will bear in mind that correspondents alone are responsible for the sentiments they utter.—ED."

Certainly the note was very necessary in a case where a correspondent would have us believe a horticultural proposition on the strength of the supposition that "the human skull changed from an ape-like form." If horticulture is to be sustained by such "facts" as these, the sooner we learn all about such facts the better. It is just

here where the value of such labors as those of Mr. Darwin comes in. He shows that every thing has developed from some *unknown* point. The man and the ape, according to Mr. Darwin, *may* have had a common origin—may all even be traced to one source, the dust of the earth,—but he shows clearly that whatever is *distinct now*, never could have *come from one another*. A new form is like a new individual, it only springs into life on the approaching dissolution of the old one.

There is not the slightest evidence or probability that "man sprang from a monkey;" and we trust these vague notions are not going to be brought in to prove horticultural truths.

CORRESPONDENCE.—A friend complains that he sent us a communication on Tomatoes a year ago. He has since been inundated with letters, some asking for seed, some wanting to know "more about the matter," and others asking the simplest and most ridiculous questions. He asks "what can be done to stop this nuisance." We should recommend in all cases to take no notice whatever of such letters. No gentleman addresses another without some introduction or prior assurance in some way that his intrusion will be agreeable. The same rules apply to correspondence. If one is so ill-bred as to thrust himself uninvited on another's attention, he cannot complain if the door be shut in his face.

PRACTICAL GARDENING.—*R. T. W., Louisville, Ky.*, asks, "Would it be safe for a man having a pretty thorough theoretical knowledge of fruit growing, but no experience, to plant an orchard, and depend on Horticultural papers and the farmers of his vicinity for the needed information. What book on the pear and peach shall I read? Your theory of roots is new to me."

[We hold that without some practical knowledge, success of any kind is uncertain. As to books, papers and magazines, they are usually an injury without the reader has some little experience of his own. The best plan for a novice is to follow the practices of his neighbor. These may not be by any means perfect, but they will insure some degree of success. Books and periodicals are revolutionary. They are intended to improve on old practices, and unless the reader has had some experience in old practices, he is not likely to understand the new suggestions. Books and experience should go together. We would recommend our correspondent to get Barry's Fruit Garden and Thomas' Fruit Culture.]

NEW HAND-GLASS.—Silas St. John has invented a Hand-glass for covering early vegetables, which seems to be a good idea.

The apparatus consists of two flat glasses, with suitable frames, and are hinged or pivoted together at their adjacent edges, the two glasses, thus connected, being furnished with end pieces of flexible material, in such a manner that the glasses may be spread apart at an angle to each other, with the end pieces expanded, so that the device may cover and surround the plant or bed, as the case may be, or have its glasses brought parallel and closed together, with the end pieces folded between them—the whole being thus made to occupy but very little space when not in use.

NAME OF PLANTS.—*P. S. Wright, (no Post Office.)*—"Please name these seeds for me. I believe they are the seeds of a forage plant from the Mediterranean."

[The common Lentil of commerce and ancient history.]

R.B. S., *Baltimore, Md.*—"What is the enclosed? Is it used for any purpose than beauty? I was told it was a medical plant."

[*Valeriana dioica*—it has some repute as a healer of cuts and wounds.]

EARLY PEAS.—A Murfreesboro correspondent sends us a sample of peas of the marrowfat section, which planted beside Daniel O'Rourke, and the usual extra Earlies, ripens before them. This should be a valuable acquisition.

A NEW CULTIVATOR.—These have rapidly improved the few past years. Mr. D. B. Wier, has now invented another style, which by the description, we should judge very useful. He calls it the "Nurseryman's Friend," and thus speaks of what it is to do:

I have adopted the above name for a Cultivator of my invention, that will without doubt revolutionize the nursery business, doing away with almost entirely the drudgery of hoeing and other tedious expensive and laborious modes of

cultivation. With its help an acre of root grafts or stocks in bud, can be cultivated thoroughly and kept free from weeds, with as little labor as an acre of corn can with a riding or Shanghea cultivator, and seedlings can be cultivated with from one tenth to one twentieth of the work they can be with any other machine or cultivator I have seen or heard of, with the exception of Prof. Turner's Seed Drill and Cultivator combined. With a very imperfect machine we cultivated last year 100,000 apple root grafts—15,000 cherry and pear in bud, 80,000 yearling apple, and 20 acres of seedlings, completely and thoroughly without the use of a hoe. In very weedy ground of course the weeds have to be picked from among the seedlings by hand, the same as they would have to be if cultivated with a hoe. All Nurserymen know the difficulty of plowing among stocks in bud, the first spring; with this machine acres of them may be thoroughly cultivated without breaking off a bud--10 acres a day, with two men and one horse, of buds or root grafts can be easily and thoroughly cultivated with the help of this machine. For cultivating young corn, we will warrant it to do twice the work, and in a more perfect manner than any other cultivator.

YUCCA GLORIOSA.—In the last number of the *Journal of Horticulture*, Hon. M. P. Wilder gives a very interesting account of his Southern tour. He speaks amongst other things of a *Yucca Gloriosa* with a stem ten inches in diameter, and arms twenty feet long. It is not generally known that this picturesque plant can be made hardy here in the North, by a peculiar process. It usually commences to throw up its flower stems just about the advent of frost, which easily freezes, and the stem then rots away; but if this flower stem be cut out early, the plant is saved. Thus we may have the plant North, but only at the sacrifice of bloom.

SEASON FOR GRAFTING.—*J. D., Cleveland, Ohio.*—"I am an amateur horticulturist, but delight to do a little gardening sometimes, as an amusement. I have a few cherries, a present from a friend, which I wish to graft. Some tell me the earlier cherries are grafted the better. Others say they do best just before the buds burst; what is the best time for grafting generally?"

[For "grafting generally," any time is good when growth is going on, and there is not too much sap in the *scion*; the amount in the stock makes less difference. If there is much in the scion, it is liable to rot before union takes place. If scions are taken from healthy trees, and kept from drying, sprouting or other injuries, grafting may go on from early spring till mid-summer. Those who praise one week more than another, are those whose "unlucky" *time* has rather been due to other circumstances.]

PLUM KNOT.—*A. W. C., Plymouth.*—"In the March number it is stated, it seems as if we are again to have plums and cherries, for the plum knot is readily kept down, now that its true nature is understood—and please to state the process by which it can be kept down."

[Early in May the bark will be found bursting, and a sappy exudation forming. This is caused by the germination of the fungus spores. At this time they can readily be rubbed out by the finger and thumb; this may have to be repeated every week for several weeks. The next year very few will appear, and the year following probably none. At one time we supposed the spores from our neglectful neighbor's trees would float over and make things as bad as ever; but more recent experience leads us to the conclusion that these spores do not travel as fast as we might suppose.

In some cases trees may be too large to go over and pinch out the developing fungi. In such cases where the trees are badly infested, it will be well to head them back; get a new growth of shoots within reach and watch them—or in very bad cases, cut away altogether and plant young trees].

ANNUAL ROOT FIBRES.—*S. E. T., New York*, writes: "The *Monthly* says, 'that it is a scientific fact that the root fibres of trees are produced annually, like leaves.' I never doubted it. I have no evidence that it is *not* so. But th idea has been controverted, by men who are supposed to know far more than myself; and I have heard them affirm that the Editor of the *Gardener's Monthly* is a humbug, in this regard.

With all confidence in your ability *to prove*, satisfactorily to the doubting, that this is *a fact*, I write to ask that, for the sake of stopping the mouths of caviling theorists, you will show the proof to substantiate the assertion."

[It is impossible to "stop the mouths" of some people. There are yet some who believe in witchcraft and sorcery. They are useful people in their way. They serve as landmarks, to show how far the world has gone ahead of them. There are some, however, whom it will interest to be able to prove that fibres are but annual.

Their best plan will be to take a grape vine which has been growing in a pot six months; turn it out, and show the "cavillers" the "roots"—perhaps 50 little things, perhaps more, all starting within, say 6 *inches of the base of the cutting.* If these did *not die*, there ought to be, "perhaps 50" strong roots, starting within 6 *inches of the base* of a cutting after a growth of two years. Did any one ever see 50 main roots so situated on a two-year old vine? Forty? Twenty? Rarely a dozen! Where have all these little root fibres of the first six months gone to? Perhaps the "cavillers" can tell! We are afraid our friend S. E T. has been in bad company. There is, and always will be a class whose abuse is far more complimentary than their praise would be.]

PLANTS FOR CUTTING FLOWERS IN WINTER. A "Brooklyn reader" asks for "three *indispensable* plants for this purpose." A rather hard question. We should not like to be limited to *three*. However, with Poinsettia pulcherrima, Stevia, and a few light colored Camellias, we might make a *beginning* for a small bouquet. They are indispensable, though a few more would not be less so.

AMERICAN HORTICULTURE.—The London *Journal of Horticulture* has an American correspondent who is contributing a series of papers on American gardens, in reference to American climate and soils. Frequently American "correspondence" comes from some one who has come here, and been weighed in the balance and found wanting. But these letters give the fairest and best account of any we have seen; and we must compliment our English contemporary whoever its correspondent may be.

GARDENING IN IRELAND.—Ireland is to have a horticultural paper at last. The *Gardener's Record* has made its appearance there.

GAS TAR ON FRUIT TREES.—*B. S., Rochester, N. Y.*—"Is gas tar injurious to fruit trees? I want to keep out the apple borer; but some friends say it will kill the trees—but I often see it recommended in the agricultural papers."

[Some tar has more Creosote in than others; in which case it is dangerous, especially on green bark. The bark of apple trees lives about 7 years; after that, the surface is but *dead* bark, and tar will not hurt it. The safest plan is to put brown paper around the collar of the tree, and tar that. It is as effectual to keep out borers,—and will certainly not then hurt the trees.]

IPECACHUANA.—It is remarkable that some attempt to cultivate this plant is not made in the Southern States. It ought to grow well there. There is a lively market for it all over Europe and America. In the London market, the most offered is from Brazil. It is quoted there at 9 shillings a pound. The botanical name is *Cephælis Ipecachuana*, and belongs to the same family as the Cinchona, which yields quinine; and the Coffee plant. It is a low bush, and has numerous creeping roots. A package of a few seeds from Dr. Carson, reminds us to say this much about it.

MANURE FOR GRAPES.—Some ingenious youth out West has made the wonderful discovery that the very best manure for grapes is the plants' own trimmings,—dried, ground, and reduced to powder. Whether the "idea" is patented or not, is not stated.

A similar wiseacre in England has found out that "Port Wine" is a remarkable fertilizer for the grape. The plant, he says, "seems to thrive on the elements of its own body." Innocent fellow! Does he suppose the grape vine does not know brandy from grape juice? Or would our Jersey Elderberry wine, made from the "true Samburg grape in John Smith's Vineyard" be as prolific in results as the genuine un-Gallicized article?

CRESTED DOG-TAIL FOR LAWNS.—We have seen this grass recommended for American lawns. Do any of our readers know of a lawn made with it in this country? Or, is it a recommendation founded simply on some English work?

DRAFT OF FLUES.—A correspondent at Lansingburg, New York, has a house heated by hot water pipes from a saddle boiler. The boiler is 14 inches wide across the grate bars, and about the same height inside. The top of the boiler is two feet below the level of the flue. A brick throat 6 feet long connects the furnace with the flue pipes, which extend 89 feet to the wooden chimney at the end. The fire does not draw right. What is the cause?

[This question of draft in flues is a very difficult one in practice. The principle is clear enough, but, there are so many things which in practice interferes with the proper working of the principle, that even with all the facts before ones eyes it is not easy for the most practical man to make a flue work as he would want it, with certainty and precision. Our reply to our correspondent must therefore, take in a very general character.

First, heat travels through a flue on the principle of gravitation, The continual pressure of the heaviest liquid downwards, forces the lightest to the surface. The warm air, being the lightest, is thus made to swim on the surface of the coldest, by the pressure of the coldest downward, just as the pressure of water downward is what makes a stick rise upwards to the top. When therefore, there is no draft in a flue, the broad reason is that the heaviest air is at the chimney end, instead of at the furnace end and thus the light air is driven back instead of forward. Sometimes lengthening a chimney will add to the draft, because it carries the opening up into a lighter stratum of air; but unless the chimney opening is in a place where the air lies cold and heavy, a long chimney is no better than a short one. A deficiency of fire is often a source of want of draft, especially in cases where the pressure of cold air downwards is about equally balanced by the pressure upwards. A very good fire at the one end is necessary to break up this equal division of power. We have frequently seen fires which would not draw at all with brick flues, do "beautifully" when the bricks were removed and thin pipes used in their stead. There was less heat absorbed by the pipes than by the bricks, and thus more could be employed in warming the air in the pipes. Then again, a dry flue will draw better than a damp one, because water absorbs so much more heat than a dry substance; a flue "high and dry" will therefore draw better than one flat on the ground. For the same reason a flue which proceeds from a furnace which has to heat at the same time a hot water boiler, never draws so well as one of equal length which has no boiler to heat, because the water takes away a great amount of the heat, which would otherwise be spent on draft.

We thought it were likely our correspondent could be assisted by these general remarks better than by any specific directions; though we incline to believe that in his case a larger fireplace, so as to burn more fuel, would probably remove the difficulty. The "brick throat," and the boiler together we judge take up all the heat the little furnace gives, and there is nothing left for the draft, which has evidently got to contend with a very depressing current at its outlet besides.

SUDDEN DEATH OF MELONS.—*Henry Ward Beecher*, writes:—"Can you, or can any of your correspondents help me in the matter of melons, in the open ground? Mine do well until about the time the fruit begins to ripen, then without warning, one by one they suddenly die off. At night the vine will be hearty, in the morning the leaves will droop, and before night the whole thing is dead.

I can find no enemy,—I have examined many vines, knife in hand, expecting to find grub or beetle boring the stem, but can trace nothing. I have never seen anything upon the outside that seemed to be feeding on the vines.

I have tried putting earth on about a foot of the vine, at the hill, to protect them. I have drenched them with whale oil soap suds; I have yellowed them with sulphur, whitened them with plaster of Paris, and am now at my wits end. Can you give me hint, suggestion or knowledge?"

[Like Jonah we have often felt disposed to anger at the loss of our gourds all in one night, and, remembering that it was a "worm" which taught him the sad lesson, have endeavored to profit by his experience, and hunt up said worm, in order to give him a chance to go into some hen's belly, where he would not probably have the same luck as Jonah had, and our vines would be safe from his further depredations. But, like Mr. Beecher, we could never catch him. We now think he is seldom there; and do not give the poultry the same liberty about the squash plantation they formerly enjoyed. We incline to think that this disease to which the whole family of cucumbers, melons, and gourds are liable, is of fungoid origin. But we have not examined any case recently, and it is but recently that we have learned any thing much of the operation of these minute organisms on healthy plants. Our recollection is, that on the roots of gourds which suddenly die in this way, there is a minute yellow powder, and we have little doubt, if our memory is correct, this will be found to have something to do with the trouble. We are not able with our present feeble knowledge of these kinds of plant diseases to suggest any remedy; but if it should be found really the cause, some good preventive will surely follow].

PRICES OF PLANTS IN EUROPE AND AMERICA.—It is a remarkable fact that the prices of most things are much lower here than in Europe, unless it is the very common plants, small, which are sold in large quantities. We have before us an advertisement of Messrs. Waterer, where the prices are put "low," to close out stock. *Abies orientalis*, from 5 to 10 feet high, $2.50 to $18 each. *Abies Douglasii*, 5 to 8 feet high, $1.25 to $2.50. *Picea nobilis*, 4 to 10 feet, $10 to $30 each. *P. Nordmanniana*, 3 to 8 feet, $3 to $6 each. *P. pinsapo*, 3 to 5 feet, $13 to $30 each. *Pinus Cembra*, 8 to 10 feet, $3 to $5. *Cupressus Lawsoniana*, 9 to 10 feet, $2 to $3 each; and others in similar ratio. When we remember that this is in gold, that their climate is so favorable to the growth of Evergreens, American prices seem very low.

SURFACE CROPPING OF VINE BORDERS is receiving great attention now in England. Both parties to the discussion seem to agree that the roots must be kept near the surface; and that digging, by destroying surface fibres, is a great injury. But one side insists that the borders may be mulched with shallow-rooted bedding plants; the other would have no living plants, but mulch with light, decaying material or fresh soil.

TEA IN THE SOUTH.—*The Tribune* believes in Tea in the South. It has had some from there, and found it good. There is no doubt of this. It was proved before the rebellion. The trouble was, that even with slave labor it could not be produced as cheaply as imported from China. With free labor, now the difficulty will be still greater. Here will be another question for the politicians—whether it will or will not pay to protect this new interest.

AUSTRIAN PINE DISEASE.—*S. Cincinnati, Ohio.* The Specimens sent, are infested by a parasitic fungus which germinates we believe on the exterior of the leaves, and penetrates the interior. The only cure is to watch for its first appearance, and cut away and burn the infested leaves. It first makes its appearance in the form of yellow spots on the leaves; after sometime it perfects itself, burst its sacs of spores, which take hold of the leaves and go on in like manner. It is not a rapid propagator; and if taken in hand in time can be easily kept under; but if allowed to spread, is very troublesome. Many persons who suppose their trees are suffering from "bad soil," "frost," and so forth, have really nothing but this pine fungus.

CAMELLIAS IN ENGLAND.—English nurserymen do not supply anything near the number of plants sold in that country. They draw their chief supply from Belgian gardens, and we understand some even go from the United States.

CYCLAMENS.—The latest novelty in England is hybrid Cyclamens: Cyclamen Persicum being the female parent. It is surprising that this plant has not been broken into before, as it is one of the most beautiful greenhouse plants, and of very easy culture. It is also an admirable room plant, flowering profusely all the late winter and early spring months.

HARDINESS OF THE OSAGE ORANGE.—*C. Duncannon, Pa.*, asks:—"Is the Osage Orange hardy enough for a hedge in this section? Some plants I have from seed sown last spring, have died back considerably the past winter."

[Many things which are ranked as perfectly hardy even so far north as Canada, die back a little in winter. The Osage Orange seedlings one year old, we think quite likely to die back a little, even in its native wilds of Arkansas and Texas. It gets hardier with age. Certainly it is hardy any where in Pennsylvania. and we suppose any where up to the Canada line. A few tops may be injured, but we suspect that there is no place in which an established hedge would be killed, and no place but what the plants would increase in size every year in spite of dead tops,—we are not speaking of the North-west In Minnesota and Northern Iowa, we believe it is not hardy].

PRESIDENT WILDER STRAWBERRY.—We understood that Col. Wilder's seedling of this name, had not yet been sent out by its present owners, and that it was only to be given away a few at a time next fall. But we see a nursery firm in the West is already advertising it, and guarantees that he will have plants "ready for delivery on or about Sept., 1st, at $1 each, or $6 per dozen."

A Beautiful Country Seat.—In our advertising columns is an offer of a country seat for sale on Chestnut Hill, by W. G. Littleton. We happen to know this place well; its owner is one of our leading Horticulturists, and much care and knowledge has been spent on making it every way worthy of its Horticultural fame.

The site is absolutely charming. All who have any knowledge of gardening, know how long it takes to get trees up to a bearing age, or to an age when their beauty begins to attract admirers. No man ever feels so much the shortness of life, as when he is about to plant a tree. To get a place like this, modern, well built, and just budding into virgin beauty, already perfect to admiration, is like having twenty years added to one's life. We hope some Horticulturist will get it, with the spirit and means to carry on what has been so happily begun.

BOOKS, CATALOGUES, &C.

Catalogue of Orchids. By A. F. Chatfield Albany, N. Y.

It gives us great pleasure to look over this list. We believe it is the finest collection of these curious and beautiful plants in the United States. A collection of over *five hundred* species and varieties, is very creditable. We hope his enterprize is well sustained.

My Ten Rod Farm, or How I became a Florist. By Maria Gilman. Published by Loring, Boston.

This is one of a class of works which have sprung into existence during the past few years, of which "Ten Acres Enough," "My Vineland at Lake View" are familiar examples. We are not sure about the morality of the thing. There is no doubt that truths can be oftener better taught by fiction than by facts. Even the great teacher spoke often to the people by parables; but we doubt whether he would have felt justified if he had attempted to make his hearers believe that when he spoke to them of the prodigal son, of the ten talents, of the foolish virgin, or of the king and the marriage feast, he was relating events that had actually occurred.

The *only* fault we find with this work is, that it is evidently the *intention* to make the world believe that it is a woman's experience, and written by a woman; but any one who has made woman a study; who is familiar with a woman's heart, and a woman's ways, will feel that it is not a woman's work. The masculine finger is every now and then plainly visible guiding along the pen.

We think it due to fairness to say this, and then be done with that side of the matter; for taking it as what a woman can or might do, it is an excellent little thing. Human nature in some of its phases is remarkably well portrayed, and the author shows considerable power in drawing up his characters. Its moral is excellent. We should like to see hundreds of Maria Gilmans, as there very well might be. We should like to know that every lady had a copy of the book. It will do much good.

The Western Rural, Chicago, Illinois.

Those of our friends who want to keep up to the times in their knowledge of Western agriculture, will find the *Western Rural* an excellent magazine; very well conducted, filled with information, and what is of much importance to reader and publisher, has a very heavy circulation everywhere. There is a great amount of labor bestowed on it—well directed labor to. Agriculture is the pioneer of Horticulture, and we feel it our interest as gardeners, to see first-class Agricultural Journals well supported.

NEW AND RARE FRUITS.

The Sugar Peach.—The Sugar Peach is said to have originated on the farm now owned by Mr. Jacob Cribbs, of Bainbridge, Berrien Co., Michigan. An old peach-budder affirms that it and the Jenny Lind are identical. It is said to produce the same from the seed more freely than other varieties. The Peach is well known in this vicinity. It is large, yellow, late, sweet, makes a good show as a market variety, and will bear when other kinds are winter-killed.—*Western Rural.*

The Stark Apple.—A report is going the rounds of the agricultural press that the Committee of the American Pomological Society, at a recent session, pronounced the Stark and Pennock to be the same; which is a most ridiculous conclusion, and shows that said committee were either humbugged with bogus Starks, or else knew nothing of the two apples in the West, as the fruits of the two varieties differ vastly from each other, in almost every respect, except-

ing that both are large, and more or less red in color.

Pennock is larger, flatter, and more highly colored than Stark, is almost always affected by bitter rot, and is in season in mid-winter. The tree is an irregular, crooked grower, and not remarkably hardy. The Stark apple is much more conical or oblong than the Pennock, remarkably fair, and perfect in almost every case; keeps readily till midsummer, and the flesh is much finer grained and better than the Pennock. The tree is a very strong, upright, symmetrical grower, making naturally a fine, round, open-headed tree, and we believe is one of the *very hardiest* of our cultivated varieties.—E. Y. Teas, Richmond, Ind., in *Prairie Farmer.*

Cynthiana & Norton's Virginia Grapes.—A correspondent of the *Rural World* says that, in 1859, he planted out 5 Cynthiana vines, from wood obtained from Mr. Husman. They were so much like the Norton, in every respect, that they were regarded as identical, and treated as such till they fruited. The fruit was found to be juicier, the juice more limpid and sweeter than that of the Norton.

We have taken excellent judges of grapes through the vineyard, and given them the fruit from the Norton row of trellis; then, directly opposite, eight feet apart, from the Cynthiana, and they at once, without any previous hint, remarked the superiority of the Cynthiana. The Saccharometrical test shows a similar difference in the weight of must. How far this difference is sufficient to maintain a distinction, is for each individual to judge. Between the two, we prefer the Cynthiana.

Apple, Red Cheek.—Mr. H. F. Grotjan, of Dalton, Mo., describes this Apple as follows: This apple is of medium size, color bright yellow, light red cheek; flavor sweet; will keep till first of March. It is one of the best sweet apples for this part of Missouri, in my knowledge. Scions of the above received.—*Rural World.*

NEW AND RARE PLANTS.

Achyranthus aureus reticulatus.—This is a "sport" from *A. Verschaffelti*, as it resembles it in every particular, except in its beautiful leaf markings, which, instead of being of the rich crimson of A. Verschaffelti, is light green, regularly marked with a network of yellow, though occasionally a part of a leaf will retain the crimson shade of its origin. The stems, which are purplish carmine, form a marked contrast to the prevailing golden shade of the leaves. In the cool months of spring and fall it forms a striking contrast when massed with the parent variety or with Coleus or other dark-foliaged plants. As a plant for hanging baskets, or a pot plant for green-house decoration, is very desirable.

Achyranthus Verschaffelti. Gilson.—Like the preceding is a sport from A. Verschaffelti, originated by Mr. Gilson, gardener to Mrs. Barton, of Barrytown, N. Y., in 1868. It is so much better in every respect, than the original, that there is no doubt it will entirely supersede it; it is of a rather more spreading and much dwarfer growth. The color is entirely free from that dullness so objectionable in the old variety; a bed of it in our grounds the past season was more admired than any of the other ornamental leaved plants there. The leaves are a bright shade of carmine, stems pinkish violet. It will be exceedingly useful as a plant for baskets or vases, as well as for massing in the flower beds.—*Henderson's Catalogue.*

Acridocarpus natalitius.—*Bot. Mag.*, t. 5738.—Malpighiaceæ. A handsome sub-tropical or warm greenhouse climber, with oblong or obovate, obtuse, coriaceous leaves, and simple elongated terminal racemes of pale yellow flowers-consisting of five rounded cuneate petals, crenately-toothed at the edge. A native of Natal, and introduced by W. Wilson Saunders, Esq.

Keteleeria Fortunei.—*Rev. Hort.*, 1868, 132, with fig. Coniferæ. Under this name M. Carriere figures the plant generally known in gardens as Abies jezoensis, which he separates as a new genus, relying chiefly on the characters of its erect cones, and their persistent, not caducous, scales. It is nearly hardy in the climate of Paris.

New or Rare Plants.--We have before us Mr. Peter Henderson's catalogue, in which we find some things of interest, which we have overooked in making our regular notes from our foreign exchanges—all the better, perhaps, as people can get them from home instead of importing them. Amongst them are:

Dianthus Querteri.—A large double crimson variety, much resembling in habit and growth the well known Sarah Howard Pink. It is of clean healthy growth and of dwarf compact habit, blooming abundantly, and without intermission, from July to November in the open ground, and if lifted and potted continuing to bloom throughout the winter months. A most valuable addition to any collection of plants.

Poa trivialis argentea.—(Silver-leaved Meadow Grass.)—One of the prettiest grasses we have yet seen, perennial in habit, forming a dense and compact growth, rendering it one of the most unique and graceful plants for vases or hanging baskets; the clearly defined lines of white and green on each blade or leaf giving it a peculiarly glittering effect. Hardy.

This we have before noticed in the *Monthly*, and saw fine plants growing last year in the collection of Mr. John Pollock, Florist, of Philadelphia.

Delphinium Bicolor Grandiflorum.—This beautiful variety is increased by seeds, equally so as the well known *D. formosum*, which it resembles in many respects, but with the improvement of having a much larger and clearer defined white centre, encircled by the richest shade of deep azure blue. It blooms almost without intermission from July to October, and, being entirely hardy, is a valuable acquisition to our herbaceous plants.

Magnolia Campbelli—Has been introduced into England. Dr Hooker thus discribes it in *Illustrations of Himalayan Plants*:

"This superb tree, which forms so conspicuous a feature in the scenery and vegetation of Dorjiling, was chosen by Dr. Thomson and myself to commemorate the eminent services or our friend Dr. Campbell, resident at Dorjiling, in connexion with the rise and progress of that important Sanatarium, as also his many contributions to our knowledge of the geography and natural productions, arts, manufactures, and races of the Nipal and Sikkim Himalaya.

"The *Magnolia Campbelli* was discovered by Dr. Griffith in Bhotan. It is a large forest tree, abounding on the outer ranges of Sikkim, at elevations of 8,000 to 10,000 feet, appearing on the road above Pacheem, and thence ascending to the top of Sinchul, 8,000, and Tonglo, 10,000 feet; though occasionally seen on the central ranges at the same elevations, it is much less frequent. The trunk is straight, often eighty feet high, and twelve to twenty in girth, covered with black bark; the wood is soft, and almost useless. The flowers are produced abundantly in April, at the end of all the branches, when the tree is as yet perfectly leafless; they varyfrom white to deep rose color, or almost crimson, and in size from 6 to 10 inches; the scent is faint. In May the tree is in full leaf, and the fruit ripens in October, when a few small and often deformed flowers are sometimes produced. The flowering branch drawn in Mr. Cathcart's collection is nearly twice as large as that represented. Young plants have the leaves perfectly glabrous; those of older trees are more or less silky on the under surface.

"There are two other species of this genus in India; one (*M. globosa*, H. f. et T.)has hitherto only been found in the interior valleys of Sikkim, where it inhabits the skirts of woods, 9,000 to 10,000 feet elevation, It is a small, also deciduous-leaved tree, with globose flowers, snow-white, and as large as a small fist, which appear with the leaves in June, and are very sweet scented. It is closely allied to the Japanese *M. conspicua* of our gardens. The third Indian species, *M. sphenocarpa*,, Roxburgh ("Coromandel Plants," vol. iii., pl. 266), is a native of Chittagong, the Khasia Mountains, and Nipal, where it inhabits subtropical valleys. The *M. Campbelli* and *globosa* would no doubt prove hardy in England, but *M. sphenocarpa* will require an almost tropical heat."

Beta Chiliensis.—Wherever space can be afforded for subtropical or other plants, that are remarkable for the grandeur of their foliage, this noble variety of beet should be with them. The closer you inspect it, the more striking is its beauty. Its growth is very robust, the leaves very large; the mid-rib is broad and thick, and the orange carmine or scarlet hue is rich in the extreme. Moreover, this beet appears to be quite hardy; at all events, the plants left out last winter were fresh and unhurt when spring returned, and, at the present moment, those in the open ground are nearly as good as if frost had never touched them.—Jno. F. McElroy, in *Gardeners' Weekly*.

New Bedding Geraniums in England.—Of bedding Pelargoniums, the double-flowered section has received some fine additions in the way of pink flowers,—Madame Lemoine and Sparkhill Beauty being the most distinct. Of crimson shades, in which there is yet much room for improvement, Triomphe de la Reine is a good acquisition. Of golden-edged Variegeted Zonals, Ettie Beale, Mdlle. Christine Nilsson, Mrs. Dunnett, and Sir Robert Napier, are all fine additions, the latter having much novelty of character. White-edged Variegated Zonals are much strengthened by the addition of Mrs. John Clutton and Mrs. Col. Wilkinson, both of which have taken the highest honors.

In the gold and bronze section there are some very promising kinds, of which Crown Prince Harrison Weir and Stanstead Beauty promise to achieve as high a reputation as their immediate predecessor, Kentish Hero. The golden-leaved sections are yet open to great improvement, though there has been no lack of new introductions.

The bedding class is strongest with new Nosegay kinds. Masterpiece and Lizzie are two very fine varieties—the latter being novel in character; while Fire King and B. K. Bowley complete a fine set of new kinds; the two last named especially noticeable for their rich and vivid hues of color. Mr. Wills' hybrids of Lateripe are yet comparatively unknown; they represent a fortunate break, that is likely to yield us a most useful race of Pelargoniums.

Jamesia Americana.—By the kindness of Dr. Parry, we once had seed of this beautiful plant, but failed to raise them. We see that our English friends have been more successful. The following, from an English advertisement, correctly describes it:

Jamesia Americana.—This is a neat, dwarf, deciduous shrub, belonging to the Hydrangea section of the Saxifrage tribe, and attaining a height of about 3 feet. It produces opposite-ovate, serrated foliage, whitish beneath, with terminal cymes of neat, white, Saxifrage-like flowers. A very rare plant, being found, apparently, in only one locality in New Mexico, in the vicinity of the Rocky Mountains.

New Yellow Bedding Fuchsia—Having seen my friend Clarke's kindly notice of my seedling fuchsia, and the request for its name, I reply, "Royalty," it being named so from its gorgeous crimson and gold hues, when first set aside for trial and cultivation. Trials it has had (and most fully proved its right to such a *constitutional* name), but of cultivation very, very little; its hardy endurance has alone induced me still to preserve it against the pooh-poohing it, or I, have had when daring to claim a notice for my poor child from those who have such *dear*, dear pets of their own, and are not over-anxious to place other children in competition with them. It just most forcibly occurs to my mind the woodcut of the boy on the Ladder, and the motto "*atop*," "Try again;" and hence, all well, I will try Royalty again; and it may be my "Royalty" will gain a "Crown," ay, many crowns, and shine forth right royally among good and useful yellow bedding plants, and prove "J. C. C.'s" hope, there may, be even a good yellow bedding fuchsia. I enclose you a plant for trial, noting I do not expect to send it out before August next, meantime hoping to give it cultivation as well as trial before offering it for sale.—R. W. Poynter, in *Gardeners' Weekly*.

Camellia Harriet Lane—*Linnœan Hill, near Washington, D. C., March 1st* 1869. I yesterday forwarded to you, through the Post Office, a flower of my Camellia Harriet Lane. I will give you the history of it:

Some ten years ago I found in my greenhouse a small plant of Touli Camellia which had been inarched on what I believe to be a seedling; below the point of junction there was a small branch with a flower bud on it; concluded to keep my eye on that bud, and see the result; it seemed to be unique, that I cut away the Touli, and then threw all the growth into the one branch, and proceeded to propagate from it. I had a lot of Camellias, 6 in number, that I had bought as imported French plants, could this have been one of them raised from cuttings and mistaken for a seedling? From its peculiarities it is certainly an acquisition. I have met with no one who has seen it before, and I concluded that it is entirely new. Joshua Pierce.

[This is a beautiful flower, unknown to us as any named kind. The flower is a peculiar motled salmon, and looks as if it were made up o half a dozen small flowers in one.]

DOMESTIC INTELLIGENCE.

MR. H. PAGE, of Lawrence, Ill., last year, raised one hundred and forty pounds of sage, on one-eighth of an acre of ground, from which he realized $140.

STRAWBERRIES are beginning to be pretty abundant in New Orleans market; but, notwithstanding the supply, the prices still keep up. Ninety cents for a small box full is the tariff. Hundreds of saucers of this favorite berry are made way with daily at the Canal street confectioneries, at the rate of fifty cents per saucer. That most delicious and delicate plum, the Mespilus, is beginning to put in an appearance. The crop of this fruit does not promise to be very abundant this season.

NOTWITHSTANDING the recent cold weather, the fruit generally, with the single exception of the peaches, is in a very satisfactory condition. The crop of the latter will probably be short.—*Henderson (Ky.) Rep.*

APPLES FOR OHIO.—The following list was adopted at a recent meeting of the Cincinnati Horticultural Society:

For market and family—Summer Fruit.—Red Astrachan, Prince's Early Harvest, High Top Sweeting, Carolina Red June, Early Strawberry, Summer Queen, Drap d'Or, Bohemia, Williams' Favorite, Summer Pearmain.

Amateur Fruit for Family use.—Yellow June, Summer Rose, Red Juneating, or Early Red Margaret, Early Bough, Primate, Early Ashmore.

Fall Fruit.—Fall Pippin, Western Beauty, Maiden's Blush, Rambo, Lowell, Porter, Domine, Gravenstein, Fall Wine, Gates or Belmont, Gloria Mundi, Rhode Island Greening.

Winter Fruit.—Newton Spitzenberg, Red Canada or Steele Red, New York Vandevere, Baldwin, Winesap, Tulpehocken or Fallawater, Broadwell Sweet, Peck's Pleasant, Jonathan, White Pippin, Smith's Cider, Rome Beauty, Rawle's Janet, Romanite, Willow, Vandevere Pippin or Smokehouse, Putnam Russet, Milam, Ohio Nonpareil, Newtown Pippin, (yellow,) Esopus Spitzenberg, Hubbardson's Nonsuch, Pryor's Red, Yellow Bellflower, Golden Russet, Newtown Pippin, Lady Apple, White Winter Pearmain, White Belleflower or Ortley Pippin, Cider Apple, Hugh's Crab, Harrison, Campfield.

FOREIGN INTELLIGENCE.

GRAPE APHIS IN ENGLAND.—We are extremely sorry to find that the root Aphis of the vine seems to be spreading through the country. We have just received some Vine roots in a dreadful state of disease; for, though the wood is still living, the whole of the bark is decomposed, and turned into a state of shapeless brown powdery matter, mixed with insect dung. Our correspondent informs us that he has found the root-aphis upon the bark, and we can confirm his observation, having found a living individual, which accords both in structure and dimensions with the insect as figured by Professor Westwood in the *Gardener's Chronicle*, p. 109.

Here, at least, we have the same insect as that which produces galls on the leaves, but it is possible that a second species, belonging to the same genus, may exist,—as we have found such a great difference in the comparative size of the eggs.

We are promised a fresh supply of specimens, which we hope to examine carefully at some future time, as the matter is really of great importance, inasmuch as it is clear that, where the insect gains ground, cultivation of Vines will become extremely precarious; and, should it be found that the insect of the leaf-gall travels down to the roots, it will be absolutely necessary that every affected leaf should at once be burnt.—*Gar. Chronicle.*

THE AUKUBA JAPONICA.—Having seen in the Journal of March 4th, several remarks and queries as to the management of the Aukuba, I will state how successful our management of it has been here.

In the grounds at this place are many large plants of the old Aukuba japonica. Last year, one small plant of the male Aukuba was placed on an inverted Sea-kale pot, close to one of the old plants. It remained there, perhaps, for a fortnight. It was then removed for only a few days to some young plants of Aukuba, under the trees in the fine old avenue here. The bush near which the male plant was first placed, has now upon it a profusion of large brilliant scarlet berries.

The plant in the avenue had only a few, which have been gathered to preserve for sowing; but, near these smaller bushes, (distance perhaps about 100 yards,) is a fine old plant, with a very considerable number of the fruit upon it. I have no recollection of having placed the male plant near this large old one at all. If this be so, the pollen must be carried by bees, and to a considerable distance.

At the time the bush, near which the male plant was first placed, was in flower, the old plant was much covered with a greenish, metallic-looking fly, which, no doubt, tended much to facilitate impregnation. This year the male plant is already in flower—it was unfortunately placed under a warm wall in the kitchen garden. The old female plants have a profusion of buds, but these have not yet opened. I have every reason, however, to hope that they will be in blossom before the male blossoms are over.

With regard to the propagation of the Aukuba I believe, from experience, that it is as easily propagated in the spring as the common Laurel.

I hope, also, that birds do not very much like the fruit. Several of the berries here have fallen, but they are becoming over-ripe. Some of these appear as if they had been attacked by birds; but they certainly are not a favorite food, for, almost touching the Aucuba plant, now brilliant with its scarlet berries, is a Holly bush, the nightly roost of hosts of sparrows. If they had liked the fruit, the Aukuba plant would have been stripped. But, certainly, this has been a most unusually mild winter, and food for the feathered tribe has been plentiful.—N. E. OWEN, gardener to W. W. E. Wynne, Peniarth, Towyn Merioneth, in London *Journal of Horticulture.*

THE KUMQUAT.—At a recent meeting of the Royal Horticultural Society, Mr. R. Fortune gave some additional particulars about these plants. It would appear to be a very desirable thing to introduce into the United States, if, indeed, some of our enterprising nurserymen have not already got it.

He says, "It is now rather more than a quarter of a century since I had the honor of being sent out to China in the service of the Society. Before that time (1842) China had been all but a sealed-up country to the rest of the world. Amongst other plants which I discovered and introduced, while on the mission, was the Citrus japonica, or Kumquat, the plant whose fruit was exhibited by Mr. Bateman at our last meeting. I found it cultivated over a large tract of country in China, but it was evidently most at home in the more temperate parts, such as the islands of the Chusan Archipelago.

Here large plantations were met with on the slopes of the hills, and very beautiful they appeared in autumn, winter and spring, covered with their golden colored fruit, and deep green leaves. The fruit is much liked by the natives, who eat the skin as well as the pulp. Its chief value, however, is when used as a preserve. A large quantity is exported annually to Europe and America, preserved, and sent home in nearly the same way as the better-known China ginger. Such shops as those of Fortnum & Mason, in Picadilly, have always a supply. I believe some of the Fellows of the Society tasted the preserve in this room about two years ago, when Mr. Bateman also exhibited fruit which had ripened in his garden.

In a horticultural point of view, however, in this country, we must look at the Kumquat as an ornamental plant only; and I think if our gardeners would set about its cultivation in the right way, they would find it easy to grow, and that it would amply repay them by being one of the most ornamental plants for winter decoration.

I will just add a few remarks on the cultivation of the Kumquat in this country. From what I have stated of its native country, you will naturally come to the conclusion that it is a much hardier plant than the common Orange. In the country where the Kumquat is found in the highest perfection, the common Orange will not survive the winters. And, on the other hand, the Kumquat when cultivated in the south of China does not succeed, although the common Orange is found there in the greatest perfection.

The cold winters of the north, which kill the Orange, are favorable to the constitution of the Kumquat. Both plants require warm summers—indeed, the northern summer is frequently hotter than the southern one. A hot, summer temperature, ranging from 80° to 100° Fahr., is necessary to enable the Kumquat to form its growth, and ripen its new wood. In winter, it will bear, without injury, from 10° to 15° of frost."

FORMING PYRAMIDAL APPLE TREES.—The London *Journal of Horticulture*, in answer to a query, says: "Your maiden trees, 4 feet high, should be cut back to a bud 12 inches from the ground. This proceeding will cause the production, in spring, of a number of shoots, which are all to be stopped when they have made six leaves each, except the shoot from the uppermost bud, which is to be trained upright, and not stopped until it has grown 12 inches. When it has attained this length, before July, take out its point, and it will most likely push laterals, one of which is to be trained as the leader, and the others stopped at the third leaf. All the shoots stopped at the sixth leaf, if they push after being stopped, are to have the shoot nearest the end of each pinched at the third joint; but the other laterals are to be stopped when they have made two leaves.

The shoots should be disposed so as to form a symmetrical pyramid, widest at the base, and gradually tapering upwards. The shoots, if inclined to grow erect, and to cross each other, should be tied down, and so regulated as not to be nearer than 6 inches, nor further apart than 9 inches. The leader, if it exceed 12 inches in length, without side shoots, ought to be shortened to that length above the highest side shoot, and these should be cut back, if necessary, to give a symmetrical head.

Any laterals on the side shoots, not required for extension, should be cut back to within half an inch from whence they proceed. The subsequent treatment is similar to that in the previous year, and this must be persisted in until the trees are of the height required. The trees should now be mulched round the stems with three inches thick of littery manure; and in March they ought to have a top-dressing of rich compost or rotten manure, to the depth of about an inch."

GRAFTING SPIRÆAS ON PLUM STOCKS.—Mr. Berkeley said, at a recent meeting of the Royal Horticultural Society, that Mr. Standish had succeeded in grafting *Spiræa Thunbergia* on Plum stocks.

[Probably many other Spiræas might be induced to do this. If so, some very beautiful lawn ornaments might result.—ED. *G. M.*]

CYCLAMENS are now popular exhibition plants in England. At a recent meeting of the Royal Horticultural Society, Mr. Wiggins, gardener to W. Beck, Esq., of Isleworth, sent a splendid collection of 78 pots, many of them containing from one hundred to two hundred blooms, throwing all other exhibitors of these beautiful flowers into the shade. Mr. Edmunds, of Hayes' Nursery, and Mr. James, of Isleworth, were second and third respectively. Mr. Buck, of Covent Garden, sent a pot in which there were two colors of flowers—the inference being that they were from the same corm. Mr. Turner also exhibited a collection in small pots.

THE KUMQUAT OR CITRUS JAPONICA seems to be much valued in England. At a recent meeting of the London Royal Horticultural Society, with reference to the Kumquat, the Chairman requested to know if anybody to whom cuttings had been sent last year had succeeded in grafting it. The most suitable stock for it was Limonia trifoliata. Major Clarke had succeeded in raising a seedling of it; it was a plant in every way worthy of being increased,—as, though worthless when grown in pots, yet when planted in a conservatory border, it forms a very ornamental shrub.

Mr. Bateman stated that he should be happy to supply any of the Fellows with grafts who might require them. Allusion was then made to the Pakington plant trainer, as an ingenious contrivance, adapted to any size pot, and readily shifted from one to the other. In conclusion, Mr. Bateman remarked that Primula denticulata seeds freely in North Staffordshire.

PROPAGATION OF MINUTE FUNGI.—Mr. Berkeley at a meeting of the Royal Horticultural Society, said that on some seeds of a *Pyracantha* from Russia, were some minute fungi, not before known in London. Young plants had been raised from these, and when they bore fruit, these also were affected by the same fungus, showing the probability of the spores remaining within the system of the plant all that time.

FUCHSIAS.—Whenever a stock of young plants is required for blooming through the latter part of the coming summer, preparations for raising them must be commenced forthwith. Start a few old plants that were put to rest early in the autumn by placing them in a temperature ranging from 50° to 60°, and keep them well syringed, to enable the buds to break strong and vigorous. When the shoots are about a couple of inches in length, take them off, and strike in a brisk bottom-heat. The old plants will be valuable for blooming in May and June, and will save the specimens from being hurried into bloom early. They should be shaken out of the old soil, the roots pruned, and potted in the same size pot again. Use good turfy loam, with a liberal proportion of leaf mould and rotten dung. If there is a scarcity of leaf mould, use cocoa-nut refuse in its place, or peat, for the fuchsia is impatient of its roots being in close stuff, and grow on in a genial temperature. If the old plants are not so well proportioned as may be desired, they will help to relieve the flatness of the pelargoniums, and other dwarf-growing plants which will be in flower at the above-mentioned season. In unfavorable weather push on all indoor work, such as tying out specimens, preparing labels, making flower-sticks, washing pots, and other operations of a like nature. It is far better for the men to do this in bad weather than to be kept out of doors, to the injury of their health, and leaving these things to be done in fine weather, when they ought properly to be out of doors.—*Gardener's Weekly.*

DEATHS OF ENGLISH NURSERYMEN.—Mr. Edward Parke Francis, the well known nurseryman of Hertford, died at his residence on the 11th inst. Mr. Francis was for many years an exhibitor of roses, and one of the first who adopted the Manetti stock. He carried on business successfully for for forty years at Hertford, where he was much and deservedly respected.

Mr. James Backhouse, senior partner in the firm of James Backhouse and Son, nurserymen and seedsmen, of York, died at his residence, Holdgate House, near York, on the 20th inst. Mr. Backhouse long ago established himself in the favor of lovers of plants, and probably very few amongst our most enterprising traders have exercised a more healthy and powerful influence on horticultural taste than it was his good fortune to accomplish. He had attained to his 75th year.—*Gardener's Chronicle.*

WINTER FLOWERS.—LIBONIA FLORIBUNDA.—The above beautiful and free flowering greenhouse plant may be included in the list of the most useful that afford us bloom during mid winter. Although it is by no means a new plant, yet it does not appear at present to be very extensively cultivated. It partakes somewhat of the character of that once-popular plant *Cuphea platycentra*, for both the habit of plant and shape of flowers are similar. Its numerous flowers are diffused over the whole of the plant, which at this period of the year gives it a very striking and pleasing effect, if intermixed with other flowering plants. It is very easy to propagate and grow. Cuttings of the young wood should be inserted early in the spring, and treated in the same way as you would the ordinary kinds of soft-wooded plants, the pot being plunged in a nice bottom heat. The plant, being very compact and short jointed, does not need after it is potted to be so frequently stopped; the great thing is to get the lower part of the plant well furnished with branches in its first growth. It is in the earlier stages only that the stopping of shoots is essential. It will thrive in good rich loamy soil, and may stand out of doors with the majority of greenhouse plants during the summer months. In common with many other winter flowering plants (as for example the Poinsetta) the Libonia loses its leaves if kept too cold in October and November. The leaves may not fall at the time, but afterwards, when the plant is in flower, it will be found that many of the leaves were dead. The fact is, we are apt to be careless in allowing blasts of cold air amongst stove-plants at this time of year, forgetting what we ought always to keep in mind—that plants take cold as we do, and none more quickly than those that come from tropical climates and are in active growth during our winter. Excess of damp or too low a temperature in winter will very much mar the beauty of this useful plant.—*Gardener's Weekly.*

GRAFTING EPIPHYLLUMS.—The London *Journal of Horticulture* says to a correspondent: "You may graft a Pereskia aculeata, the thickness of a pencil, with the Epiphyllum truncatum. Whip grafting is the best method, though side grafting will answer well, leaving a portion of the stock to which the graft can be secured after insertion. It should be done before the Epiphyllum begins to grow. The graft should be secured with mats, and have a little moss placed

over it and secured. It is well to have the stem of the stock and the graft of the same thickness at the point of union, and the outer edges on one side, at least, corresponding. If the plant be placed in a mild bottom heat, and be kept moist and shaded from bright sun, the graft will take more speedily."

Fertilization of Sea Weeds.—Mr. Brongniart in his recent "report on the progress of French Phytology," shows that the fact is now well established that Sea Weeds have as distinct sexual forms as higher plants,—but that the processes of fertilization are much more wonderfully complicated.

Horticultural shows in England.—The future of Flower Shows is one of the difficult questions of our time. As a rule they do not pay, and the problem to be solved is this—Why not? They were in former days a source of profit: now too often end in loss. What can make this difference? Certainly not that horticulture and floriculture have retrogaded, or even that the cultivators have stood still. Certainly not, we think, that fewer persons than formerly take an interest in matters connected with gardening.—*Gardener's Chronicle.*

Pronunciation of Bouquet.—Hearing a good linguist pronounce this word, the other day, as if it had been spelt *bo-kay*, I was induced to ask him his reason for doing so, when he gave me the following information, which may interest some of your readers. The word, as we are accustomed to seeing it spelt, is a French perversion of two Tartar-Arabic words, *bo*, beautiful, and *ka*, perfume: hence, the original meaning of the word *bouquet* is, anything which possesses a beautiful perfume.

In like manner, the lusciousTokay wine (of which the Austrian Emperor is reputed to be as fond as the King of Prussia was of Champagne) is indebted for its name to the two Arabic words, *to*, royal or imperial, and *ka*, perfume. When, therefore, connoisseurs speak of their wines having a "beautiful bouquet," they are correctly using the word in its original sense, but they are incorrectly and unwittingly using the adjective twice,—first in English, and then in Arabic.—W. T., in *Gard. Chron.*

Destruction of Cells by Frost.—It seems probable that frost causes some more subtle alteration in the arrangement of the atoms of which those cells consist. To put the case as simply as possible, we may state that the cells are so many bladders of a membrane allied to starch in chemical constitution, and lined with a thick albuminous fluid, which forms a sort of interior lining to the bladder, and which itself encloses a watery juice.

The cells thus constituted, when in a healthy state, although they are permeable by fluids, under certain conditions, yet offer resistance to any passage of fluids, into or out of them, if these conditions be not complied with. Thus, we see cells containing colored juices, in juxtaposition with others with colorless juice, and yet there is no admixture of the contents of the adjacent cells. So we see starch, or gum, or oil, or poisonous matters stored up in one cell, when its next door neighbor may be quite destitute of them.

But, when frost comes, and is succeeded by a rapid thaw, this state of things is altered—filtration of the contents of the cells, through their walls, takes place, the colored juices mingle with the colorless, the poisonous with the harmless, and so on; because the molecular structure of the cell-walls is so altered that they become porous. A kind of crystallization takes place in the covering of the cell; its watery element separate from its solid atoms, and these latter become aggregated into masses, leaving interspaces or pores between them, through which the liquid contents of the cell pass; and hence the flabby, oozing condition of leaves, and other soft parts of plants when thawed rapidly.

If the thaw takes place gradually and slowly, then there is a chance of the old state of things being resumed; but if the thaw be sudden, the molecular changes are too great to allow of the resumption of the old ways. This seems a plausible explanation of well known facts and it is borne out by experiment; still it is not the whole truth, because it affords no explanation of the case of the Mosses already alluded to, neither does it satifactorily account for the fact that a plant which will survive one frost and one thaw, even if tolerably rapid, will nevertheless succumb shortly after to a frost of less intensity.—*Gardeners' Chronicle.*

The Fir Cone Gatherers of the Hartz Mountain.—The Germans utilize the forests of

the Hartz mountains in a great variety of ways. Manufactories are established among them for carrying on work in all its branches, while tree culture is systematically pursued to prevent exhaustion of the forests. Among the various workers, says a letter in the New York *Post*, is one of more than ordinary interest, the fir cone gatherer, who gathers the cones from the pine trees in order to obtain their seed for planting. The pines have their fruit on the high branches, and in order to procure them in a proper condition for seed, these must be gotten by skillful climbers, who, with iron hook and cord, manage to get up to the very topmost branches, where they reap their harvest. They are called "workers in the air" and are remarkable for their monkey-like dexterity. It costs too much labor in climbing a high tree for them to think of going through the process many times during the course of a day, and therefore when they wish to transport themselves to a neighboring tree, they set the branch they are on in violent motion and, by a well timed spring, alight upon the branches of the other. Of course there is much danger attending this work, and many a gravestone in the village churchyard tells the fate of these "airy workers."

Opening the Cones of the Lebanon Cedar.—The cone of the Cedar is remarkably tough, and will not discharge its seeds by exposure to heat like those of other Firs. I have tried various methods of extracting the seeds, find the following most effectual:—Fix the cone in a vice, and saw off about three-quarters of an inch top and bottom; then with a mallet and cold chisel divide the cone into quarters, which must be separated into smaller portions. Place these in the kitchen screen for say twenty-four, hours, and they can then be separated without much difficulty. If very tough use a pair of wire nippers to open them. A good cone contains from forty to sixty seeds.—*London Journal of Horticulture.*

Chinese Primroses.—We forward specimen blooms of our strain of Primulas, with foliage of each, and which you see will consist of at least 12 varieties. These are all fixed, and come perfectly true from seed. We also include some of the double flowers obtained from seed this season. *Windebank & Kingsbury, Bevois Valley, Southampton.* [This is by far the most varied and interesting set which has come under our observation. The doubles are mostly shades of French white, large and full, and some of them nicely flaked with rose. They have a typical foliage. Among the single forms with typical leaves are some very fine striped forms, good whites, of rich rosy-purple, and one almost wholly pink. The Fern-leaved forms vary from rosy-purple to various tints of the carminata hue, and to blush white and purplish lilac. All have a very prominent greenish-yellow star-like eye, this eye being, in some instances, nearly three-quarters of an inch across. One of these double-flowered Chinese Primroses set against a moderate-sized leaf, makes one of the prettiest button-hole bouquets imaginable; and so, indeed would the single ones, if they were less liable to fall from the calyx.—Eds. *Gardener's Chronicle.*]

Anthurium Scherzerianum.—The beautiful *Anthurium Scherzerianum* will, under proper treatment, be pushing up more flowers about this time, (March) and should therefore have the lightest and most prominent position in any suitable intermediate house. It should only have a moderate amount of water at the root at this season, though in the absence of any great supply of moisture in the atmosphere, or actual syringings, occasional moistenings, would be very beneficial, and might be readily applied by running a moist sponge over the leaves. Too much attention cannot possibly be given to such a gem as this.—*Gardener's Chronicle.*

Ferdinanda eminens, (Crescentia macrophylla of Johnson's "Cottage Gardeners' Dictionary.") An excellent plant for sub tropical gardening. Large, bold foliage. Having a noble appearance, and being tall, it is well adapted for the centres of beds and backs of borders. It should be sown early in March, in a good, brisk heat, forwarded in heat, and thoroughly hardened-off previous to being planted out. A compost of two-thirds turfy loam, and leaf mould and old cow dung; or well rotted manure one-third, with a free admixture of sharp sand suits it. The plants ought not to be planted out until the beginning of June, and should have a sheltered situation. It attains the height of from 8 to 12 feet. The Ferdinanda is a perennial, but may be treated as an annual or biennial.—London *Journal of Horticulture.*

PINUS TAMRAC is described in the *Gardeners' Chronicle*, by Mr. A. Murray, from a single cone brought there by Mr. Warren. It is allied to *P. muricata*.

He describes it as a tree of moderate height and pyramidal form, the leaves in pairs, stiff, of a glaucous green, with the sides slightly serrated; the cones reddish, fawn-colored, pendant, from 1½ to 1¾ inches long, one side being longer than the other,—giving them an incurved shape, the scales being hooked at the extremity in some specimens, and in others terminating in a long, awl-shaped spine, not larger than a thread. This difference in the cones appears to indicate that two species have been confounded together. If not so, it is a curious circumstance that such a marked difference should exist in the cones of the same species.

[We have only just been able to decide that Pinus Coulteri and P. Sabiniana, also described in a hurry, are the same. Will this one prove any more distinct? Our English friends do not seem to understand the natural variations in American cones.—ED. *G. M.*]

NEW VARIETIES OF RICINUS.—The common Castor Oil plant is much valued for its stately appearance, in English gardening. New kinds are being introduced—some species, others but varieties of known kinds. The following is a list of the most distinguished. They are splendid plants for making bold and noble beds, when well grown attaining a height of 12 feet, with leaves nearly a yard in width. Very ornamental, and easily grown:

Ricinus Africanus, large green foliage; *R. Africanus albidus*, silvery stems and veins; *R. Belot de Fougeres*, excellent variety, large glaucous foliage, and dark green fruit; *R. Bourboncnsis*, superb large ornamental foliage; *R. Braziliensis viridis*, fine large foliage, with green fruit; *R. compacta*, very elegant, leaves bright green; *R. insignis*, foliage and fruit dark glaucous green; *R. macrocarpus*, mulberry stems and foliage; *R. Obermanni*, large, dark foliage, one of the best; *R. purpureus Cinarescens*, dark foliage, splendid variety; *R. sanguineus tricolor*, fine red foliage and fruit; Species from the Philippine Islands, splendid foliage, tinged with purple.

SOLANUMS.—These are being used in England in "their" sub-tropical gardening. The following are some of the principal kinds employed. Of course most of our readers know that these ornamental varieties partake of the Tomato and Egg-plant character. Some have small red berries, of a Capsicum character, which are all Solanums:

Solanum Balbisi, large white flowers, showy foliage; *S. betaceum*, large, bright green leaves veined purple; *S. laciniatum*, beautifully cut green foliage; *S. macrocarpum*, large dark blue flowers and fine foliage; *S. robustum*, large, bronzy foliage, with yellow spines; *S verbascifolium*, dark blue flowers, large lanceolate whitish foliage.

The following have very pretty fruit, and are suitable for growing in pots, for table or greenhouse decoration:

S. Acanthocarpum, a new variety, of excellent habit. The branches are whitish, and armed with strong spines, the leaves being silvery and tomentose on the under surface, and green on the upper. The fruit, which is produced in abundance, is of the size of small oranges. *S. capsicastrum*, orange-scarlet fruit; *S. cornulicælum*, very large, showy fruit, bright yellow, like small Custard Marrows in shape; *S. Sodomæum*, very handsome fruit; *S. Texanum*, fine scarlet fruit; *Weatherill's New Hybrid*, an exceedingly fine variety, growing to a height of 18 to 20 inches, dense and compact, with free branching habit, and producing a great abundance of beautiful berries, which vary in size and shape, some being perfectly round, others cordate, with many other intermediate forms.

CYPRIPEDIUM HARRISIANUM. (*barbato villosum*).—The leaves of this hybrid are ligulate, much narrower than those of C. barbatum, broader than those of C. villosum; tridentate, with a bristle-like middle tooth, as in C. barbatum, glossy, as in C. villosum, and marked with numerous tesselated dark green hieroglyphical markings, as in C. barbatum. The peduncle is quite that of C. villosum. The bract is that of the same, carinate, ancipitous, sheath-like, but only half of the length of the ovary, having less hairs than that of C. villosum, green and violaceous. The upper sepal has a broader base than that of the said species, and comes nearer to that of C. barbatum, but it is covered with a denser pubescence. The atroviolaceous streaks, in lieu of being distinct, are confluent, so that the greater part of it appears of a blackish-purple, and only whitish near the top. It is very glossy.

The inferior sepal is ovate triangular, whitish green, with green nerves, and some purplish streaks near the limb, not glossy. It is quite intermediate, in this respect, between its two parents. The petals are spread at a right angle, and are ligulate ovate acute, hairy on the upper and under limb, as in C. barbatum; narrower than in C. villosum; very shining, port-wine colored, with a very dark line on the middle nerves. Nerves green beneath, dark atroviolaceous above.

These organs are intermediate between those of both parents; but, if one overlooks the bristles on the margins, they stand nearer to those of Cypripedium villosum. The lip has a conical sac, with two erect, blunt, lateral horns on its orifice; the limb of the unguis is involved. It is of a light port wine color, with a tinge of light green here and there. It has dark brown spots on both sides of the limb, bristles around the mouth of the sac, and fine dark bristles internally. It is very glossy at the base of the unguis, but elsewhere it appears nearly opaque.

The staminodium is very like that of C. barbatum, transverse, emarginate at its base, and the basilar lobes descend and approximate on the back side, as in C. barbatum. The anterior part is three-lobed, with blunt side lobes, (in lieu of the acute ones of C. barbatum), and has an acute middle tooth. On the disc there are some reticulate dark green veins, and a very little hooked ancipitous callosity, instead of the large one of C. villosum. The stigmatic lamina is abruptly stipitate, as in C. barbatum. Stiff bristles stand around the base of column, as in C. villosum.

This hybrid was obtained by applying the pollen of C. barbatum to the stigma of C. villosum. The colors are much brighter and darker than those of C. villosum. The flower is smaller than that of C. villosum, and as large as those of the largest varieties of C. barbatum.

There are various opinions as to the value of hybrids. We hear there are some gentlemen who shrink from the apparition of such plants even among Orchids. No doubt, hybrids of doubtful origin, which make their appearance without certificates of birth and parentage, are most troublesome both to men of science and to amateurs. Thus the study of garden specimens of Pelargoniums, Cacti, Ericas, is very irksome and often impossible. But if the origin of all these doubtful plants were known, would it not be a grand thing for science? And so it is with Orchids.

We have to thank Messrs. Veitch for some of the showiest plants ever obtained in gardens. They have, from the beginning, candidly stated what kind of plants they were. May such interesting experiments be often repeated. It is not only the desire of getting valuable novelties that we allude to. No: a higher wish is, that by such continuous experiments we may, by-and-by, get quite new views about the limits of both genera and species. The grand questions about the limits of species will be more and more elucidated by such cross-fertilization. Some grave doubts about the limits of genera, apparently weakened by some so-called species, will be solved by the knowledge of the hybrid nature of the intermediate connecting links.

These splendid acquisitions are due to the unrivalled skill and sagacity of Mr. Dominy. Now, we are told it was Dr. Harris, of Exeter, who gave Mr Dominy the idea of hybridizing Orchids, at a time when we knew nothing about the European Orchid mules, and when there was not the least indication of the present great excitement of mind as to the limits and origin of species. The showy plant now described, could not, as Mr. Dominy well observes, bear a better name than that of Cypripedium Harrisianum, in honor of the gentleman to whom we are indebted for so much.—H. G Rchb. fil.

CANNAS.—The following is a list of the best kinds used in English gardening:

Canna Annei Orange, glaucous foliage, deep orange flowers; *Superba*, dark purple foliage, salmon flowers; *Bihorelli*, dark foliage, orange-red flowers, fine; *Chatei sanguinea*, dark foliage, dark red flowers; *Commutata*, large green foliage, with showy red flowers; *Discolor floribunda*, green foliage, veined purple; *Hybrida Warscewiczoides*, beautifully veined foliage, with red flowers; *Keteleeri*, a superb new variety; *Krelagei discolor*, fine purple foliage and bright red flowers; *Lemonei*, red flowers, a splendid new variety; *Musæfolia*, splendid large green foliage, red flowers; *Peruviana*, bright green foliage, vermilion flowers; *Purpurea hybrida*, dark foliage, veined crimson; *Rendatleri*, fine bronzy foliage, orange flowers; *Rodezii*, excellent large-leaved variety, *Rotundifolia rubra*, dark purple foliage and scarlet flowers; *Scelowii*, green foliage, scarlet flowers; *Warscewiczii sanguinea*, blood-red flowers, fine; *Rosea*, handsome green foliage, rose flowers; *Warscewiczoides grandiflora*, dark red flowers, fine; *Nova*, a magnificent variety, with bright crimson flowers. Finest mixed, various.

HORTICULTURAL NOTICES.

PENNSYLVANIA HORTICULTURAL SOCIETY.

The April exhibition was a fair average one. The collections of Joshua Longstreth, (which for nearly half a century have added to the monthly interest of these meetings, now ceasing with his death,) were very much missed. It is to be hoped that Mr. S. S. Price, who inherits the family taste for horticultural pursuits, will maintain the ancient supremacy of the house in these matters.

On this occasion, the large, overgrown plants which sometimes appear, were wanting. This is no loss. Years ago, when gardening was all within a mile or so of the place of meeting, it was well for the Society to encourage this style of floriculture. Now, when most of its members are miles away, the articles for competition should be smaller,—such, for instance, as one could bring in on a railroad car. Where pot plants are called for, the premiums should be offered for the best plants grown in the smallest pots. The Pennsylvania Horticultural Society was the first Society to make any move at all in this direction. It has stood still since that time, if not gone a little backwards; while the Royal Horticultural Society, of London, has taken up the idea, and pushed it to excellent results.

The pots in which the collection of Mr. F. R. Starr was exhibited, were quite large enough—eight or ten inch. Two or three of the Azaleas, trained as small pyramids, were models of beauty. Several of the varieties were of first-rate excellence; amongst these especially, Queen Victoria, Baron de Rhet, Toilet de Flore, Magnet, and Exquisita pallida. They were very creditable to Mr. Kelley, the gardener.

The plants from Mr. McDonald, gardener to M. T. Baird, Esq., were also much admired for their compact beauty. Specimen of the Abutilon vexillaris, still somewhat rare, trained on an oval cylindrical trellis, and covered with blossoms, was very well grown. The Rhyncospermum jasminoides, with its sweet white flowers, and very easy growth, was also good, because well grown in a small space. The Begonia nitida semperflorens is also a good show plant for this season.

The same exhibitor had beautiful specimens of the bi-colored and tri-colored Zonale Geraniums. These are particularly fine plants for evening decoration. To our mind, their effect by gaslight is even better than that from flowers. Virgin Queen, Meteor, and Silver Star, were among the best varieties in the collection. The various Dracœnas in this collection also showed this class of plants to be also unique for this purpose.

Some of the best grown Cinerarias we have ever seen at these meetings, were here on this occasion, from Gebhard Huster, gardener to J. B. Heyl, and from Mr. H. A. Dreer, who is one of the most regular of the contributors of the Philadelphia florists to these meetings.

Mr. Heyl's Cinerarias were peculiar, from the fact that the flowers were arranged in separate heads, giving the plants the appearance of being made up of a dozen or more small bouquets, with green leaves between each bunch. Mr. Dreer's were of the ordinary dwarf kind. He had also very well grown Pansies, and th following beautiful Zonale Geraniums:

Mrs. Pollock, Victoria, Bicolor, Mrs. Whitty, Lucius, Lord Chancellor, Beaton's Indian Yellow, Waltham Seedling, Etoile de Matin, Princess Lichtenstein, Christine, Minstrel.

The named Verbenas were also equal, at least, to any similar collection, and consisted of Loyalty, Sadowa, Pluto, Scarlet Cushion, Gem of the West, Star of the Union, Rover, Boule de Neige, Giganti, Bizarre, Robin Adair, King of the Blacks.

The Vegetables were very good for the season—but the two dishes of forced Strawberries, from D. W. Herstine, and from J. McDonald, gardener to M. T. Baird, Esq., were particularly nice to look at.

Mr. Herstine's were chiefly Jucunda and Wilson's Albany, and Mr. McDonald's, French and Triomphe de Gand. The latter had the one good point of superior flavor. The last, with very good flavor, had the additional points of size and beauty. Some of the berries, though forced, were indeed nearly as large as the mammoth berries for which Mr. Knox has become so justly famous—these had the first premium. Mr. McDonald also had fine Oranges and Lemons, from Mr. Baird's collection.

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HINTS FOR JUNE.

FLOWER GARDEN AND PLEASURE GROUND.

Annually as June comes, and the roses begin to bloom, we are beset with inquiries what to do for the Rose slug, the nasty little fellow which eats out all the green and leaves the caves beautifully skeletonized. Nothing is more easily kept down. Watch for their first appearance and crush them, a few minutes on each plant will do. The Rosebug, is another troublesome thing on the flowers, these are easily shaken off into a bowl of water. All through the garden handpicking and watchfulness will be found the best remedy for all the larger class of insects. Speaking of Roses, we suppose all our readers know that the flowers of the Perpetual kinds should be cut away as soon as the petals are faded. The buds then push out again, and flowers come from the new growth.

Rare roses are increased by layers, buds and cuttings; layers are made of the strong growths as soon as the wood gets a little hard, a slit is cut in the upper side of the shoot, to be layered, and it is bent down into rich soil. Everything roots sooner in rich than in poor soil. The cut used to be made on the under side, but they are then liable to break on bending down. Budding is done by taking out a piece of bark with an eye, and inserting it under the bark of another kind and then tied in. It is nice amusement for ladies, and any florist will explain the process to those who do not know. Budded Roses are not very popular owing to the tendency of the kinds used for stocks to throw up suckers, which, unless the intelligence of the grower is equal to keeping them off, in the end kill the kinds budded on them. Rose cuttings are generally easily raised by those who know little about it. In proportion as one becomes a skilful florist, the failures to strike Rose cuttings increase. Almost every one who puts in a few "slips," of half ripe wood into a pot of earth, and sets the pot under a shady fence, succeeds; but as soon as he or she knows "all about it," they can't strike Roses. Here at least is an encouragement to the new beginner.

In nothing has progress in gardening been better indicated than in the use of the pruning knife on Evergreens. Up to the existence of the *Gardener's Monthly*, one might prune any trees *except* evergreens. Few articles ever took the public more by surprise, than our first paper showing that pruning benefited these plants. Now it is generally practised, and it is believed to be followed with more striking results than when used on deciduous trees. In transplanting evergreens of all kinds from the woods, the best way to save their lives, is to cut them half back with a hedge shears, and when any come from the nurseries with bad roots, or roots which have accidentally got dry, a severe cutting back will save them. And then if we have an unsightly evergreen,—a one sided, or sparsely clothed evergreen, if it is cut back considerably it will push out again green all over, and make a nice tree. It must be carefully remembered however that in all these cases the *leading shoot* must be cut away also, or the side branches will not come out well. An idea prevails that a new leading shoot will not come out on the Pine family after one has lost its first. But this is a mistake,; sometimes they will not show a disposition to do so, side shoots near the leader's place will seem to put in a rival claim for the leadership the following year, but if these are then cut away they will not make a second attempt, and the real leader will then push on into its path of destiny.

The Scotch Pine and the Chinese Arborvitæ, are two plants which derive wonderful benefit from the pruning knife. Both these are very liable to get ragged when left entirely to their natural inclinations, but grow with a beautiful compact luxuriance under the occasional appli-

cation of the knife. Indeed the Scotch Pine with judicious pruning makes one of the most beautitul ornaments of the lawn and pleasure ground. It can be made to take many odd forms, one of the most picturesque is obtained by cutting off its head when about ten feet high, and never let another leader grow. The side branches are all cut away except the upper tier, these spread then outwardly,—not exactly creeping but flowing forward in the most luxurious green imaginable, making a much prettier arbor than any weeping tree we ever saw.

These peculiar objects are very striking in a flower garden, and other things beside evergreens will furnish them. Deciduous shrubs may often be trained into interesting forms. The Wisteria sinensis, for instance, makes a very interesting object trained as a small tree. If tied up to a stake for one or two years, and then suffered to stand alone, it will make a pretty round head, and when in Spring the pendant blossoms are in profusion, it makes an unique ornament on a lawn.

Increased attention has been given the Rhododendron and Azalea the few past seasons, as they prove to be much more easy to manage than people formerly thought. It is found to be a mistake that they need *shade*. It is only a *cool soil* they require. This is made by deepening it, and adding to it material, which will keep it open and porous at all seasons. We accomplish this by adding fine brushwood with the heavy clay loam. Those who have them in good growing order should take care to keep them in good health by occasional top-dressing. This they enjoy, as the little hair like roots fancy feeding in cool places, near the surface. Mr. Kelley, an excellent landscape gardener of Philadelphia, informs us that he has seen well-decayed cow manure used to very great advantage as a dressing for these plants.

For most plants cow manure, well-decayed, is among the best of fertilizers. It seems to have the power of keeping moist longer than most other manures, and of course no fertilizer is of value, only as a plant by moisture is enabled to take in the fertilizing particles into its system.

Summer bulbs like Tigridias, Tuberoses, and Gladiolus have mostly been planted by this time, but many to have flowers late keep them till June before planting.

Evergreen hedges will require attention as they grow. Where the height desired has been attained the top and strong growths should be cut back while they are still watery. The side shoots need not be touched till past midsummer. All wise people now employ the conical shape for hedges. In cutting back the top growth at this season, the conical form can still be preserved.

Flower beds should be hoed and raked as soon as the ground dries after a rain. Loose surface soil prevents the under-stratum drying out. Peg down bedding plants where practicable. Split twigs make the best pegs. In dry weather do not water flower-beds often; but do it thoroughly when it is done. See that the water does not run off, but into and through the soil.

Peg down Roses where a heavy mass of flowers is desired. The side shoots push more freely for this treatment.

All those who have set out trees the past Spring, should take the first chance of a dry spell to loosen the soil deeply about them with a fork, and immediately after beat it down hard again with the heel, or some better "clod-crusher." Innumerable lives of trees may be saved by this simple practice.

Many parties have a difficulty in keeping trellisses, when covered with a weight of vines, from becoming 'top heavy,' and blowing over in a wind. This can be remedied by nailing a cross piece to the trellis a few inches long, just above the ground, or even two pieces, making four cross-shaped arms. This will eventually prevent 'swagging,' no matter from what part of the compass the rudest winds may blow.

Dahlias must not be allowed to bloom too early. Keeping them growing well till fall, at any cost. If they become stunted by early flowering, a few miserable sun dried July flowers will be the poor reward.

Herbaceous plants should be staked, to keep from wind-blowing. White Pine stakes, with *their ends charred* by being slightly burned in a furnace, will last for many years—as long, in fact as the best painted cedar—a good hint for bean poles, trellises, &c.

After bulbous roots have done flowering, they should be at once taken up, carefully dried, and placed away in paper bags till wanted next fall. If suffered to remain in the ground, the rains we get through the summer keep their activity excited, and is unfavorable to that rest necessary to make them bloom finely next year.

FRUIT GARDEN.

Whoever grows wheat or any other farm crop, knows that the soil will not maintain its fertility without manure. He knows that however rich a virgin soil may be, it cannot long remain rich without his artificial aid. Hence, an annual manuring becomes, in time, as necessary as an annual sowing of seeds. How few remember this in orchard management. The tree has to flourish in the same soil for years,—or perchance after all the best of the soil has been taken away by regular farm crops, and then comes the "Wonder why our *climate* will not grow trees as it once did." Soils cannot well be too rich for fruit trees; not to have manure dug deeply in, but spread on the surface. Possibly we suffer more from the Apple and Plum borer than we one time did, but these are so easily kept out by oil paper about the collar of the tree, that excuses for not raising fruit, on account of injury to the trees by borers, is only exhibiting one's laziness. Fire blight and plum knot may be easily kept under, and the curculio "fixed" by Hull-catchers. The codlin moth may be pretty well kept under by persistence in destroying wormy apples, so that with the exception of leaf blight and injuries from frost, there is really no formidable obstacle to the way of successful fruit growing. Leaf blight is not yet mastered. If it is true as appears probable, that the fungus which produces the effect we see, can only germinate in a high temperature, we may, by taking steps to keep the great reflection from our summer sun parched soil from operating on the leaves, yet master this last great evil.

The evil effects of severe Summer pruning on fruit trees are also now clearly recognized. All pruning, winter or summer, is an injury to vitality. Frequently the injury is so slight that the tree soon recovers, and some other advantage being gained, pruning on the whole may be a benefit. It is well, however, to always keep in view the principle that pruning always weakens, in order to do as little of it as possible, consistently with what we wish to accomplish. At this season we may do some good in saving the necessity for winter pruning, by pinching out shoots we may not want, while they are in a young and immature state.

Grapes first coming in bearing should not be permitted to perfect large crops of fruit while young. It is excusable to fruit a bunch or so on a young vine, "just to test the kind," but no more should be permitted till the vine has age and strength. Vigorous growth, and great productiveness, are the antipodes of the vegetable world. Encourage as much foliage as possible on the vines, and aim to have as strong shoots at the base as at the top of the cane; this can be done by pinching out the points of the strong shoots after they have made a growth of five or six leaves. This will make the weak ones grow stronger. Young vines grow much faster over a twiggy branch, stuck in for support, than over a straight stick as a trellis, and generally do better every way. Where extra fine bunches of grapes are desired, pinch back the shoot bearing it to about four or five leaves above the bunch. This should not be done indiscriminately with all the bunches. Too much pinching and stopping injures the production of good wood for next season. These hints are for amateurs, who have a few vines on trellisses; for large vineyard culture, though the same principles hold good as far as they go, they will vary in their application.

Grapes in cold vineries will now be of a size fit for thinning. In those cases where the bunches are intended to hang long on the vines, they should be thinned out more severely than those expected to be cut early. A close, compact bunch favors mildew and early decay.

Fine, rich color is always esteemed as one of the criterions whereby to judge of the excellence of a fruit. Sun light is of first importance; but it is not generally known that this is injurious when in excess. In a dry atmosphere, with great sun-heat, where the evaporating process goes on faster than the secretive principle, what should become a rich rosy blush in a fruit, is changed to a sickly yellow; and the rich jet black of a grape becomes a foxy red. Some Grape-growers of eminence, in view of the facts, shade their vineries during the coloring process; but others, instead, keep the atmosphere as close and moist as possible. The latter course detracts from the flavor of the fruit. The best plan is that which combines both practices.

Watch newly planted fruit trees. If they have but a few weak leaves only, it shows the roots have been injured; then prune them severely, which will make them grow freely. It should be a main object to make all transplanted trees not merely have leaves, but have new shoots at the earliest possible moment. If they are growing very well, they may be allowed to perfect a few fruit. Overbearing on a newly planted tree

is, however, one of the best ways of making it stunted for years

Strawberries, when in grown hills,–the most laborious but most productive method of growing them,—should have runners cut off as they grow, and the surface soil kept loose by shallow hoeings occasionally. Short litter, half rotten as a mulch, is also beneficial. Lawn mowings are often applied, but with little benefit. Where they are grown in beds, they should not be too thick, as they starve one another, and the crop next year will be poor.

Blackberries are not always ripe when they are black. Leave them on till they part readily from their stalks.

Currants are so easily grown as to require few hints for their management. If they throw up many suckers, take out a portion now, instead of waiting till Winter to cut them away. The Currant borer is a great pest, eating out the pith of the young shoots, and causing them to grow poorly, and bear but small fruit next year. Gummy "fly-paper" is, we think, the best thing to catch them.

Gooseberries should have the soil, and even the plants, if it were practicable, shaded a little Dry air about them is one great cause of mildew.

In the interior department, Peaches that have been slightly forced will be about maturing, and the atmosphere must be allowed to become dryer, by admitting more air and using the syringe less freely. This is necessary, not only to perfect the flavor of the fruit, but to mature the wood properly for next season's fruit. All of this has to be done with caution, as a sudden change from moist system of culture to a dry one will be certain to injure the tissue and breed disease.

Red-spider and other insects closely follow on the heels of a dry atmosphere. They must be watched, and nothing suffered to injure the leaves till by natural maturity the plant has no longer use for them.

VEGETABLE GARDEN.

Peas for a fall crop may be sown. It is, however, useless to try them, unless in a deeply trenched soil, and one that is comparatively cool in the hottest weather overhead, or they will certainly mildew and prove worthless. In England, where the atmosphere is so much more humid than ours, they nevertheless, have great difficulty in getting fall peas to get through free from mildew ; and to obviate these drying and mildew-producing influences, they often plant them in deep trenches, made as for celery, and are then much more successful with them.

Cabbage and Broccoli may still be set out for fall crops, also requiring an abundance of manure to insure success.

Lettuce, where salads are in much request, may yet be sown. The Curled Indian is a favorite summer kind ; but the varieties of Cos, or Plain-leaved kinds, are good. They take more trouble, having to be tied up to blanch well. Many should not be sown at a time, as they soon run to seed in hot weather.

Endive is becoming very popular as a winter salad. Now this is the time to sow. The Curl-leaved is the most desirable. Sow it like Lettuce.

Celery for early use is often planted out this month, though for winter use July or August will be early enough. It is best to set out in shallow trenches, for convenience in watering, the celery being fond of hydropathic appliances. If the ground has been deeply subsoiled, and the subsoil well enriched, the trenches may be near a foot in depth, for convenience in blanching ; but beware of planting down in poor, barren subsoil. Many plant in double rows. Where very superior celery is not an object, this will do, but the single row system is the best for excellence. The season is now arriving when the advantages of subsoiled ground will be apparent. In such soil plants will grow freely though there be no rain for many weeks. Some of our best growers now plant entirely on the surface, and depend on drawing up the soil, or the employment of boards or other artificial methods of blanching.

Cucumbers for pickling may be sown this month.

Parsly for winter use may be sown now in boxes of rich soil, and set in a cool, shady place till it germinates.

Asparagus beds should not be cut after the stalks seem to come up strong, or there will be but a poor crop the next season, and the beds will 'run out,' in few years.

The Swede Turnip or Ruta Baga should be sown about the end of the month. A well-enriched piece of ground is essential, as by growing fast they get ahead of the ravages of the fly. Manures abounding in the phosphates—bone-dust, for instance,—are superior for the Turnip.

Sweet Potatoes must be watched, that the vines do not root in the ground as they run, which will weaken the main crop of roots. They should be gone over about once a month, and with a rake or pole, the vines disturbed somewhat from their position.

COMMUNICATIONS.

SHRINKAGE OF TREES IN WINTER.

BY MR. A. HUIDEKOPER.

It was not expected by me when I made a suggestion on the above subject, in the February number, page 46, that I should be drawn into any discussion about it, nor do I entertain the opinion attributed to me by Mr. Fendler, (April number, page 107,) "that there is no other cause from which a tree should split in cold weather but shrinkage." When trees are in the condition spoken of by Mr. Fendler, at page 107, viz : "The interior of which consists of a mass of partially decayed spongy wood, saturated with water," I can readily conceive that the interior water crystallizing into ice, might disrupt the outer walls of the tree surrounding it, but this is not the case put in December number, 1868 at page 364, where the result is attributed to water taken up by capillary attraction in the interior sap vessels," the freezing of which was said to have caused the bursting of the trees, and to which my suggestion was intended to apply.

Although I have lived many years amid Western forests; and have seen many trees that have been split by the hard freezing, I am free to confess that I have not examined them with a critical eye, to detect the exact modus operandi of the frost.

One of the difficulties in getting at a satisfactory conclusion in this matter is, that to the eye, the results would so often appear to be the same, whether the cause be external shrinkage or interior expansion.

A theory, however, to be true, must adapt itself to all the facts of the phenomena under investigation, and so I mention a few facts illustrative of what I suppose to be the contractive tendencies of dry cold winds

During a dry, cold spell in the winter of 1865-6, (see Cleveland *Herald*, February 9, 1866.) the ground at Cleveland, Ohio, showed long rents, three inches wide and several feet deep ; one of these rents passing through the house of a Mr. McIlrath.

In extreme cold nights it is not uncommon for ice of considerable thickness on ponds of water or lakes, to be rent asunder, the fracture being attended with loud explosive-like sounds.

In laying the iron on rail roads considerable allowance is made for the summer elongation and the winter contraction of the rails

Not to multiply illustrations, I would say that Mr. Fendler and myself do not quite coincide in our observations in some things referred to by him. He says green wood before a fire splits in many places, gradually, and without noise. I have often noticed it to part with one long fracture and with considerable noise, which would be largely increased on the more extensive scale of a whole tree.

Many persons must have noticed how green furniture, subjected to furnace heat, sometimes cracks with a noise almost equal to that of a pistol. That fragments of the trees split by frost are ejected with violence, is not quite conclusive on the point under discussion, for when trees are being split by wedges applied at the surface, owing to a complication of forces, cross-grain in the wood, &c., fragments are often thrown out with considerable force.

Mr. Fendler says he cannot see why, if shrinkage is the cause of trees splitting, it does not rather occur under the dry, hot summer air. Possibly the answer to this may be that summer circulation distributes as well as qualifies the heat, while the drying process would contract the outside of a tree, summer heat would expand it, and thus a proper relationship of all the parts is kept up. On the other hand, in the winter, cold winds abstract heat, and dry winds abstract moisture, and here are two co-operative contractile forces at work to produce the alleged shrinkage.

Mr. Fendler says if a tree split from shrinkage it will have a poor chance for its life ! but he does not say why.

He further says that trees bursting by freezing do live, which proved that the injury is not the result of shrinkage The quod erat demonstrandum of this proposition is no clearer than the other.

I make these remarks not to antagonize Mr. Fendler, for I wish no useless discussion of the matter, but simply in the hope that he, and any others of your readers who may be disposed to investigate the subject, may carry the two hypotheses in their minds, and when they come across facts bearing on the question, may adopt that theory with which those facts seem best to harmonize.

NOTE ON CURCULIO.

BY WM. ARCHER, TRENTON FALLS, N. Y.

I see in your columns several plans advanced for the destruction of the curculio. If some of your readers will adopt the plan that I have practiced for the last 15 years, *with entire success*, the curculio wont deter them from planting on as large a scale as they please.

Take an old tin pail, punch holes in the bottom like a sieve; procure a pole long enough to reach above your trees, tie the pail on the top of the pole, put some air-slacked lime in the pail, raise it over the top of your trees, strike the pole with your hand, and you will send a shower of lime all over the trees ; the operation ought to be per formed about three times ; first when the flower begins to expand, and again in four or five days; three times is about enough ; each operation must be performed in the morning, when the dew is on the trees.

PURSH'S JOURNAL.

(*Continued.*)

July 31. This morning after breakfast, I went down the river on board a boat : This River though deep & large having all the body of water in it, which is discharged by all the small lakes, is very much impedet by rifts or ledges of rock, which go across it, sometimes for a considerable distance ; the bottom is in deep & shallow water covered with aquatic plants, some of them, chiefly Potamogetons grow to an exceeding length in deep water.—Eels & Water snakes both of a most enormous size are the chief inhabitants of it.—I thought to have observed some leaves of Valisneria floating on the water.—The banks of the river are very romantick : in showing the woods & River in its primitive state, exactly as much so as when it was not known to white people. Here is no house or any sign of cultivation to be seen, untill you come near Oswego. At Oswego Rift, I quited the boat, being only a mile to that place then by land : when I came ashore I observed a species of Hydrocotyle, with peltated eaves, without flowers, growing along the edge of the water, my walk dit go along the shore which was covered with Chesnut, Oak, Hemlock—Populus candicans, heterophylla & tremuloides—Scrophularia nodosa in flower—Hypericum perforatum even has found his way to this retired place, in company of some more obnoxious foreign weeds.—Soon after my arrival & having refreshed myself at Oswego, & went to see the lake, which indeed has a noble & grand appearance, & without knowing it previous to be only a lake, one would take it for the shore of the main ocean : The shore here is rocky & pretty high : as I wished to get something to eat & nothing had been ready, before I went, I could only make a small excursion. I soon found Hippophae canadensis which is a very singular shrub.—The different above mentioned Poplars mixed with other wood make the timber. Cornus several sorts among which is the Osier rouge or Red Osier one, which has white berries, several sorts of Salix—Rubus odoratus in flower & fruit—Hamamelis virginica &c. form the shrubbery—a species of Gnaphalium, unknown to me, & very handsome is in plenty. Vaccinium frondosum & Pensylvanicum—Hyeracium Kalmii,—Solidago spec. Equisetum Sylvaticum &c. I collected here.—I had to wait, till nearly sunset, before I could get any thing to eat & then it was nothing but eel, which I never could eat. I had to do as well as I could, among people, whose life was very rough, & who think about nothing but making some money, by the little trade they have here, which is chiefly salt : it is a place, I dislike the most of any I ever have been at, in the United States : I was not able to get one civil man by whom I could get some information.

Augt. 1. Yesterday & to day I made enquiries about a sandy beach ; but all information I could get, was, that it was above 30. miles distance : though I was anxious of seeing such a place here I had to give up the Idea, as I had inured one of my feet very much on the day before yesterday: The big toe had inflamed itself to an alarming and painfull degree, the chief part of her skin having been rubbed off in travelling. I took another walk towards the lake, hat observed nothing more than mentioned before : In the town, the Hyoscyamus niger grows as a common weed in the streets. There are several specimens of very curious granit on the Lake shore in large blocks, they are red, mixed with black, greenish black & white, they would look beautifull if worked into some monument : a small peple of similare construction I kept as a specimen. It does not appear to be any limestone in the banks of this lake, but I only seen a very small part of it, so I can not exactly tell.—My foot getting exceeding sore I concluted to return as the place altogether was disagreeable to me. I could not stay to get it well here, & so I sooner might return, than stay, as I could do nothing here : I got on board a boat & proceeded up the river.

At Oswego rift the Justicia pedunculasa was in flower—pedunculis longitudine foliorum, floribus capitatis, calyx 5—phyllus, subaequalis : foliolis lanceolatis tubo corollæ longior : corolla bilabiata, lab : superius planum, apice reflexum purpurascens, bifidum l. emarginatum ; lobis lateralibus erecto patentes, oblongo rotundato obtusæ. Lab. inferius ovato oblongum, obtusum lateribus reflexum, eleganter rubro-purpurascens punctatum antheræ geminæ. I fished up several specimens of Valisneria, which grows in great abundance in this river. Plantago major grows on the banks & sometimes in the water itself with leaves so large as the Pothos fœtida. I at first could hardly believe it to be Plantago : Pontederia cordata is very frequent. Potamogeton natans, gramineum, & crispum cover the bottom of the water in large beds The navigation up this river is very tedious on account of the rappids or rifts : we arrived in the evening at Oswego falls where I stood over night.

Augt. 2. No boats going up to day, it being Sunday, I stood at the falls, as I was not able to undertake it on foot, on account of my sore toe ; to spent the time to some purposs I got into a small boat & went in pursuit of aquatic plants. In a cove, the river forms here, I found a field of Nymphœa odora, beautifully in bloom. It is astonishing in how deep water some of them grow I pulled up flower stems 11. feet long, which dit not seem to be entire nighter ;—Potamogeton pectinatum P. had done flowering. I observed this plant likewise last year in Virginia.—A species of Equisetum growing in four feet water seemed to me strange, may be it is a stem of the Hippurus ? Sagittaria lancifolia this plant was quit new to me, having never seen it before :—A singular aquatic plant, with serrated leaves, I never could make out, what this is. I seen it frequently in New River last year. On some of the stones I found a curious plant attached to the rocks under water : it is articulated & consist of green joints like blatters ; may be it is a zoophyte ! Ranunculus aquatilis &c.

On a gravelly Island I seen the Lobelia cardinalis in flower. About the shore I observed a Silene without flowers, specimens preserved.

Augt. 3. This morning I got on board a boat again : observed nothing new excepting a long-leaved grass which was floating on the water, the boatmen calld it Wild rice & said I would see plenty higher up : which was the case, it covers here the shore & is when in flower quit upright : I suppose it to be the Zizania fluitans—at any rate it is a Zizania—Water snakes are very plenty in this river & lay sometimes on the logs in the water in swarms, it is very disgusting to see them & eat eel afterwards :—It soon began to rain, & I was exposed to it all this day, till we come to Three River Point where we stopped & took dinner it keeping on raining we stood here over night.

4. We left Three R. Point this morning : I seen several ducks which are apt of alighting on trees ; for this they are calld wood ducks ; as we had good wind, I had not much oportunity of observing any water plants : all I seen however were the same observed yesterday ; When we came to the outlet of Onondaga lake, the Creek was covered at its bottom with Chara, which the boatmen call Feather beds.—The lake has exceeding clear water & a white bottom, which I suppose consist of the sediment of shells as above mentioned. We arrived at the Salt point about noon. Having taking something to refresh myself here, I proceeded on to the point, being very anxious of getting a letter which would allow me to proceed on my yourney, as I thought this place & neighborhood sufficiently explored ; I found a letter from Dr Bn. containing 10 Doll. but not leave to go on, or any direction whatever, I likewise got letters from Mr. Hart at Wilkesbarre & Mr Wagner at Easton concerning my trunk, which I intend to order to be sent back to Philadelphia, as it is only a vexation of letting it follow on.

5, 6, 7, 8. Having plenty of plants to take care of, I devoted the first part, to it. Wrote letters &c: These 4 days were constantly raining; I was not able to do any thing out of doors.

9. Having no other persuit and the weather getting fair again, I went to Salt Point. I observed, besides the plants mentioned before, a species of Andropogon, very tall—Monarda clinopodia, as I suppose, the stem is solid & looks different from M. allophylla — Hydrophyllum canadense Stag cabbage—Blitum—Silene pensylvanica—Chenopodium anthelminticum — Aster conyzoides—Hieracium spec. Hedysarum nudicale—acuminat. & a very tall large flowering sort, which makes a very fine show.—Urtica procera P. which I seen with Mr. Hamilton who calls it U. gracilis.—This evening set in raining again, which obliged me to stay at the Point.

10. Rain all day, was confined to the house in consequenc.—(*To be Continued.*)

FRUIT CULTURE.

BY J. A. NELSON, MERCER, PA.

"We cannot raise fruit now as we could in early days." This is the general opinion of most all fruit growers; the only difficulty in the way then, was the late spring frost which often occurred and destroyed the fruit, as well as in later years, but then the numerous insects and fruit worms were unknown. It was also a rare thing that the fruit buds of the most tender varieties were ever winter killed, although the winters appeared very hard and cold, with often a great depth of snow, setting in a month earlier in the fall, and continuing on, mostly with a regular freeze, till a break-up sometimes about the latter part of February. Now our fine and moderate weather, continuing on so much later in the fall, that it brings on too forward the Peach and other tender fruit buds, that makes them more apt and easy to be killed by the sudden changes of the weather.

When winter-killed, among the large and most forward Peach buds, may be found some quite small ones not injured.

The autmn of '65 was so favorable that along in the month of October might be seen the Cherry, Plum and Apple trees out in bloom, the consequence was the next season there was but a very light crop of Peaches.

Another thing more favorable for fruit in earlier days, was that the country was new, and the surface soil not worn out, but mellow and light, well adapted to spreading of the roots. Old tilled land becomes more solid and compact, that it requires occasionally a stirring up to loosen the soil and promote the growth of the roots; and then there was far more wood land, that was a great protection and shelter, as such a situation appears much warmer in winter than out on the open grounds. Our fruit trees, to do well, must be as hardy, if not hardier, than our forest trees; if we transplant the latter on to open ground for shade trees, if they do live, which is not al ways the case, they never make more than a poor dwarf, scrubby oak or hickory, for they need their former protection from the scorching sun of summer and the piercing winds of winter; also the light loose forest soil instead of the heavy hard, compact earth.

If we take our nursery fruit trees, that have been grown on the best of enriched soils, and had the best of culture, and been partly sheltered by others while in the nursery, and transplant them out into open ground, probably in poor, indifferent, old worn out soil, with out any protection, and then give them but little attention or cultivation afterwards, it is no wonder they dont do well. When a nurseryman's catalogue says his trees were grown on the best of soil that could be made, I would not wish to buy any of his trees, without I had good soil to transplant in, and would give them good cultivation afterwards, for it might be like taking a pig out of the pen where it had been well fed, and turn it out into a pasture lot, and let it take care of itself. How seldom do we find any well-cared for, thrifty, fine-growing, healthy-looking orchards; but any amount of old, decaying and neglected ones, with all the owner's stock, perhaps, turned into them, to eat up the pasture, and tramp the ground over the roots, nearly as hard as the public road. Little wonder fruit growing is a failure.

From my own experience, and the close observations of others, I might as well expect a good crop of corn after planting, giving it no further attention or cultivation, as to expect fruit after planting the trees and give them but little attention afterwards.

It costs a great deal more labor and attention to grow fruit now, than it did many years ago, but the demand and prices have greatly increased, that it pays well, and no doubt may continue on so for a long time to come, which should encourage every one to plant more fruit trees, grape vines, &c.

LETTER FROM WM. R. PRINCE.

The following is probably the last letter on a horticultural subject, written by the late Wm. R. Prince, (about our note at the foot of his Yam article,) and we publish it just as received:

FLUSHING, February 16, 1869.

FRIEND MEEHAN:—

Yours of the 13th received, and I am grateful for its kindly tone to an old worker, and I am specially pleased in regard to you being one who has intelligence and candor to do justice throughout.

Permit me, my dear sir, to argue with you even on the point of cheapness. You are thinking of the old variety, which when we began, we befooled ourselves to making it run as deep in the earth as possible, just as if we were as scant of land as the Chinese. Had we grown them on ordinary ploughed soils, the length in such is but 10 to 12 inches. Therefore, any one can grow even the old long variety, just to suit himself—10 inches, 12 do., 15 or 20 inches. 'Tis said that in China they make it run down 40 inches, by putting all nutriment (manure) at the bottom, and having only sand above.

But, my dear sir, we are otherwise provided in every way. Among the kinds I have cultivated for 2 years, there is one round, like a Potato, measuring 2½ to 3 inches through—there are ovate ones, about 6 inches long and 3 in diameter, and a beautiful oblong variety, averaging about 7 inches in length; and among received from Northern China last week there are all shapes and sizes—one kind is a short ovate, each weighing about 3 lbs—solid now as a rock, but with a few eyes swollen. They are of varying shades—snow white, pale lemon, yellow, pink tinge, &c.

I think this explanation will be interesting to your readers, if in time. It is best to plant in March, as the prolonged season enlarges the size very much. Yours respectfully,

WM. R. PRINCE,

P. S. You thus see that expensive digging will only apply to one variety, and to that class of persons who delve into the earth beyond all necessity, and who are of the same class with the first settlers of our great city, then called New Amsterdam, who, on landing from their Dutch barques, immediately commenced dyking out in our bay, although there was more land already made by Nature, than would last them ten thousand years. P.

Further as to cheap digging; the round, the ovate and oval yams grow nearer the surface of the soil than potatoes do, and as there at least three times as many on the same average of land, I think this a pretty fair average evidence of cheap digging, when compared with potatoes, and it is with them, I presume the comparison will be held. W. R. P.

This was scrawled at last moment, and put in, as the thought came to me so plainly.

THE CINCINNATI HORTICULTURAL SOCIETY.

We extract the following from the inaugural address of President Anderson, as containing matter of interest to all our readers:

In some cases heretofore, of the election of President of the Society, it was considered a duty of the newly elected officer to offer a paper as an inaugural address, connected with the history of the institution, or on subjects connected with the science of horticulture.

This I conceive to be a good custom, and one which I am disposed to encourage, and not to avoid by any neglect of mine on this occasion of assuming the duties of President for the ensuing year.

I will therefore ask your indulgence while I appropriate a portion of the time at this meeting in the observance of the custom heretofore adopted; and although I may not engage your attention so profitably as others have done on similar occasions, yet I will at least attempt to keep up the habit, that those who come after me as Presidents elect, may also consider it a part of their duty.

In submitting these inaugural remarks, I can not do better than to remind some of our new members of the origin of the Society, and the influence it has had in this community, at the same time giving a brief notice of some of the fruits and flowers which we cultivate: how the migration of plants has accompanied the migration of civilized man to various regions of the world, and the astonishing progress made on this continent in the pursuits of agricultural and horticultural industry, as exhibited to us by the census of 1860, and by other reliable statistics.

The Cincinnati Horticultural Society was organized in 1843, and since that time up to the present, it has continued to hold weekly meetings; and for the most of the time the proceedings have been given to the public through the prints of the city, or through periodicals issued by the Society.

It was the main object of those who organized the institution to improve the fruits, vegetables and agricultural productions of this region, which appeared to be neglected; and although some good fruits had been introduced by the early pioneers, yet in 1843 it was fast disappearing, and a new stimulus was required to cultivate a taste for new fruits, new flowers, and better vegetables, to meet the requirements of the growing city.

To improve the taste of the public, the members procured from different regions seeds, grafts and roots, which were distributed freely, without charge, to those who applied for them, and the public appreciating these donations, and the enterprise of the members of the society, our markets were soon filled with fine fruits and vegetables, which have continued, making our city famous in all parts of the Union for the excellence of its berries, its vegetables, and especially

the grapes of the Ohio Valley. With new varieties of fruit. and improved culture, horticulture was made profitable, and our climate at that time being considered highly favorable to grape growing, many of our members entered largely into the production of wine from native grapes, at the same time, raising the best of fruits. The Queen City, therefore, was soon known as the great wine market for native wines, and the great fruit and flower market of the Valley of the Mississippi.

We now find, by Mansfield's statistics of Ohio, in 1862, that half the native wine made in the United States is made in the Valley of the Ohio, and half the residue in California. Ohio, in 1860, was the first wine State in the Union, having produced in that year nearly 600,000 gallons of native wine, much of which was produced by members of this Society. The success of grape culture and fine fruit has continued to foster a taste for ornamental trees and flowers, which led to fine landscape gardening. This taste has given us the beautiful settlement of Clifton, and in addition to our suburban ornaments, it has given us our cemetery of Spring Grove, which is unequaled for beauty, the charter of which came through this institution.

It is to the efforts of this organization that the citizens of Cincinnati are indebted for the great abundance of strawberries, and all the varieties of small fruit, which, in the proper season of the year, not only fill our own market, but supply all the principal towns of the West and North with early and delicious fruit.

With horticulture and a fine taste for cultivating the productions of nature, we find that agriculture, mechanical industry, the fine arts, and our admirable system of education, are all here in the highest perfection, to erect the columns of the most refined and stately structure of society. As evidence of this taste for the beautiful, we find an important daily commerce carried on in roots, flowers and hot-house plants, independent of our fruit market, thus diffusing a taste for new flowers and pot-plants, which may be seen in every part of the city, either in door-yards, or often on the window-sills of those who have no other place to display them.

The discussions at our meetings on horticultural subjects, and our published proceedings have always interested portions of the reading public, not only in this vicinity, but in other portions of the Union, and in Europe. As an evidence of this interest taken in France in our proceedings, allow me to refer to the estimation in which this institution was held by the distinguished botanist and naturalist, Michaux of Paris, who was, in his lifetime, an honorary member of our society, and published the great work on the forest trees of America; who, for his exalted character as a scientific man, was presented by the Government of France, through the Emperor, with a gold medal, as a mark of the highest honor which the people could confer upon him. Some years after this medal had been received by him, when on his deathbed, by his will, giving strict directions to be carried out, the same medal was awarded to the Horticultural Society of Cincinnati, as the most proper institution of all others, to be the depositary of this valued gift. Accordingly, the medal was sent to us, and is now in our possession.

Permit me now to direct your attention to some of the flowers cultivated in this vicinity. and of foreign origin. The Tuberose was brought from the East Indies, where it grows wild. A very large proportion of our ornamental roses are from France. Our Tea Roses are from China, and many of our hardy roses are from England; many of our ornamental shrubs are also from France, Great Britain, Germany, and some of the most beautiful from Australia. The Crown Imperial was brought in the sixteenth century, from Persia. The French Marigolds are natives of Peru, South America. The Victoria Regia Lily is from Brazil. The Dahlia is from Mexico, where it is a single flower; but when cultivated in this climate a beautiful double flower of various colors. The Ranuncules, it is said, was brought from Asia, and from Marseilles, in France, dispersed over Europe.

Our Tulips cultivated in this country are from Holland, where the people were once under such a state of excitement to possess new varieties, that tulip bulbs sold at enormous prices.

The Hyacinth of Europe was also introduced from Holland, and at one time in Virginia the bulbs were sold at fabulous prices, for ornamenting the gardens of rich planters.

I pass without notice the endless variety of our own native flowers of almost every variety known, all of which may be improved by cultivation. To give a botanical list of the beautiful flowers, which in the summer season cover our extensive and magnificent prairies, would be an endless task. No other region of the world can equal our great West in the beauty and diversified forms of the flora, to be seen in our Western prairies, nor can any region equal the West in the richness of its soil.

Look next to the fruits from foreign countries. The Apple was introduced into Britain by the Romans, to whom twenty varieties were known in Pliny's time. The original was probably the crab,and from Asia. The pear tree is another species of the same genus as the apple, and like that tree in its wild state, thorny, but differs from it in its mode of growth.

The Medlar is a native of the south of Europe.

The Quince is a native of Austria, and other parts of Europe.

The Peach is a native of Persia, and when first brought to the Roman Empire, possessed deleterious qualities, which probably arose from the prussic acid. Cultivation has made them the delicious fruit now known to us.

The Cherries are said to come from Cerasus, a city of Pontus; whence Lucullus brought them after the Mithridate War, and were introduced into England in the first century. The Nectarine is a native of Persia, introduced into England in the sixteenth century.

The Plum, including the Prune and all other varieties, is supposed to have come from Asia, and introduced into England at an early day.

The Gooseberry and Currant are native on the banks of rivers in England and Scotland.

The vine now cultivated in Europe does not belong originally to that region; it grows wild on the coasts of the Caspian Sea, and perhaps, like most of the acclimated fruits, is a native of Persia.

The Apricot is supposed to have originated in Armenia. It is also found in Japan, and on the mountains west of Pekin, in China.

The vegetables which forms so large a part of the food of animals can not be enumerated here; it will only be necessary to notice some of the most prominent in our market gardening.

Asparagus—This plant is a native of the British Isles. According to Loudon's Encyclopedia many of the steppes of Russia, in the southern part, are covered with this plant, which is there eaten by the horses and oxen as grass. In its native state it is so dwarfish, even when in flower, that none but a Botanist would consider it the same species with our cultivated plant. It was a favorite with the Romans, where it grew to large size.

Celery—This valuable vegetable is a native of Britain, and was found originally in ditches and marshy ground. The seeds and whole plants, in its native state, were acrid and dangerous, with a peculiar strong taste and smell. By culture it becomes the mild and grateful garden celery, for which improvement in cultivation, the British are indebted to the Italians.

Cabbage grows wild on the sea-shore on different parts of England, and it is probable that the Romans introduced a variety of cabbage into South Britain.

The Turnip is a native of Britain, and the different varieties are extensively cultivated on that Island, and in all the districts of Europe.

The Water-melon and the Squash are native to the new world.

The Potato is another article of vegetable food originating in America, and, probably, the most universal article of food used.

Thus, America has partially repaid her debt to the Eastern Continent. Maize and the Potato are very valuable additions to the field agriculture of Europe; and the Tomato is no mean gift to the kitchen gardens of the Old World.

VARIATIONS IN TAXODIUM AND PINUS.

BY THOMAS MEEHAN.

(From Proc. Acad. Nat. Sciences, of Philada. Oct. 1868.)

In some remarks before the Academy on July 14th, in reference to adnation in the leaves of Coniferæ, I said that the power to branch was the test of vigor; and with increased vigor came proportionately the power of adnation. I pointed out that this was the universal law through all Coniferæ, so far as I had been able to examine them; and that it fully accounted for the specific identity of many forms supposed to be distinct. I went so far as to suggest that *Taxodium distichum*, Richard, and *Glyptostrobus sinensis*, Endl., were no doubt the same thing, because the only difference between the growing plants was in the different degrees of adnation in their foliage; and because with this adnation was the increased power to branch observed in all other cases. The two points, going along together, seemed to indicate that this could not be a solitary exception to so clearly marked a law. I exhibited specimens taken from *Taxodium*, and from *Glyptostrobus*, showing the approach of the two in the manner the theory indicated.

Since then some new facts have come before me confirming this view in a remarkable manner. On the nursery grounds of Mr. Robert Buist, of the Darby Road, near Philadelphia, are a few trees which I supposed to be the *Glyp-*

tostrobus, but which Mr. Buist assured me were many years ago selected by him from a bed of some thousand *Taxodium* on account of their peculiar appearance. I exhibit specimens from eleven different trees. It will be seen the suppression of the leaf blades or adnation is in exact proportion to vigor, or the power of forming branchlets, and with this increased vigor the *Taxodium* becomes *Glyptostrobus*, so far as any comparison of leaves and branches can identify anything.

At the conclusion of my paper on the *laws of adnation*, read before the meeting of the American Association for the Advancement of Science, at Chicago, Dr. J. S. Newberry kindly pointed out that, in a fossil state, *Glyptostrobus* and *Taxodium* were often found side by side, but always with so much difference between the scales of the cones that, while assenting to the general principles of the paper, he could not regard these two plants identical. As cones are nothing more than metamorphosed stems and branches, it is not surprising that the same laws of adnation which might operate in making the *Taxodium Glyptostrobus*, and which make them look so very distinct in the different stages of adnation, should also operate on the fruit, and make it appear, when at the widest point of divergence, as really different. It should in fact do so, and instead of the difference in the cones of these fossils being any proof of their specific distinctness, it must be received as a natural sequence of the law I would evolve.

The specimens I now exhibit show at any rate that the *two plants* are identically the same. This granted, it completely refutes the generally received theory, that no one species of Coniferæ inhabits at once the eastern and western worlds

In my paper on variations in *Epigæa repens*, presented for publication last May, I endeavored to show that "cultivation" and "external circumstances" would not account for variations in form to the extent they usually received credit for; but that there was rather a regular principle of growth in form, as well as in substance, independent of outward agencies, which agencies were calculated quite as much to preserve as to originate the growing forms.

Those accustomed to study chiefly from herbaria, and little from living specimens, have no idea of the great variations from one type which many species present. These comparative differences are often so insensibly blended, that it is only when we meet with some very extreme forms that they attract our attention, and then only to note their extreme differences. Even when noted they are contemned as obstructing classification, rather than welcomed as invaluable aids in resolving the laws of form.

In a recent review of part 16 of *Decandolle's Prodromus*, which has lately appeared, with the Coniferæ by Prof. Parlatore, the reviewer says: "It must be clear to every one that a great number of so-called species are varieties of one strain, *doubtless produced by localization in different climatal or natural conditions.*" (*Gardener's Chronicle*, page 922, 1868.) As this review is understood to be by one who is himself known as a describer of many Coniferæ, which are doubtless varieties of one strain, it may be worth while to point out, in some Coniferæ, that neither climatal nor any external condition has as much to do with variation in form as an innate power of development, independent of either climatal or local causes.

In one of our commonest pines—*Pinus inops*—a very careful comparative examination will show scarcely any two trees to be exactly alike; the habits of the tree, the shade of color, or the length of the leaves, the size or form of the cone, the scales, or seeds—in some one point a difference may be found which cannot easily be described in words. When extremes are brought together the differences are quite as great as characterize different species. By descriptions alone they would be fairly entitled to rank as distinct. The mind fails to unite them. It is only the educated eye which perceives their identity. I exhibit two cones from two trees growing on the banks of the Susquehanna, near Harrisburg. One is very long and narrow—three and a half inches in length, by only three fourths of an inch wide at the base, and the scarcely projecting scales barely spinescent, the other nearly as wide, but only half the length, and with strongly projecting scales and spines. Unless with previous acquaintance of *Pinus inops* in its natural places of growth, a botanist might well be pardoned for considering these distinct species, yet with the multitude of intermediate forms, all under the same external conditions, how can any "localizations" account for the varieties? I have the same experience with *Pinus rigida* and *P. pungens*; and it is doubtless true of other species.

I have noted some interesting variations in *Pinus Banksiana*, which in some way do seem to be connected with location, although I have

no doubt that ages of geographical travel from a central point conjoined with the principle of inheritance, might find the natural inherent laws of variation sufficient to account for them. Dr. Gray says, in the last edition of his "Manual of Botany," it is a shrub or low tree 5 to 20 feet high, giving N. Maine, N. Michigan and Wisconsin, and northward as the localities. I did not collect in northern Illinois, but friends tell me it grows some thirty miles from Chicago, only as a bush. Michaux observe that in Labrador it shows signs of decrepid old age at 3 feet, and in no part of America did he find it over 10 ft. Dr. Richardson, in Franklin's narrative of a journey to the shores of the Polar Seas in 1819—1822, describes it as 40 feet high in favorable situations, but the diameter of its trunk was greater in proportion to its height than in any other pines of the country. Douglass found it to have longer leaves on the Rocky Mountains than elsewhere. In company with Mr. Wm. Canby, I had the opportunity of examining large forests of them growing on the neck of land between Escanauba, on Lake Michigan, and Marquette, on Lake Superior, where we found them just the reverse of Dr. Richardson's experience. Here they were more slender in proportion to their height, not only than any pine of the country, but probably than any pine elsewhere. Most of the trees were from 30 to 40 feet high, remarkably straight, but only from 6 to 12 inches in diameter. We roughly measured one at Escanauba which was about twenty inches in diameter, and perhaps sixty feet high, little shorter than in fact a very fine Pinus resinosa, about two and a half feet through, growing near it.

Now these variations have relation to only one particular, that of size; there would no doubt be found others in many respects; but even in this one character no theory of climate or soil will account for them. If a low temperature dwarfs the Labrador specimens, what is to account for the small bushes in Illinois or southern Wisconsin, in lat. 42°? And again, why are these latter in the rich soils of this district so small in comparison with the almost timber trees a few hundred miles farther north, and in which is usually considered the poorest land of the north-west? Soil and climate may have some influence in aiding variation, but facts show the origin is deeper than these, namely, a native power to change, kept in check only by inheritance and perhaps external circumstances.

I have heretofore reported *Pinus pungens* as growing at Port Clinton; I find it now abundantly on the hills about Harrisburg; so it may be set down as native to the whole interior of the State of Pennsylvania.

EDITORIAL.

THE NATIONAL POMOLOGICAL SOCIETY.

Sometimes we have to keep reminding our readers when good things are to be spread before them, and are often astonished that so much talking to should be necessary before people can see their own good. In the case of the meeting of the American Pomological Society, which is to meet next September, in Philadelphia, we have however a remarkable exception to this, for we see by our exchange papers everywhere that the whole country is fully alive to it, and the prospects are that it will be one of the most enthusiastic meetings ever held. From the East, West, and South, the sound of busy preparation comes, and as the prospects so far, is for one of the most abundant fruit seasons known for a long time, the meeting will be doubly interesting. In some quarters, the States have taken the matter officially in hand. The Kansas government has voted a sum of money to enable that State to be creditably represented, and we doubt not much will be done elsewhere of a similar character. The Fruit Growers Club of New York, has voted to represent itself in the German Horticultural meeting this summer at Hamburg, so we may feel sure that it will do no less for our home society, and we hope its delegation will be back time enough to tell us how our affair compares with the European one.

The enthusiasm manifested in behalf of the American Pomological Society must be very cheering to its veteran President Wilder. It will give renewed youth to his vigorous frame. It is remarked with pleasure by his friends, that notwithstanding his continued labors with them in horticultural pursuits, time deals so leniently with him.

THE PATIENCE DOCK, AND THE POKE PLANT.

Neglected vegetables. Much has frequently been said about the introduction of the *Phytolacca* or Poke weed into the vegetable garden. But we doubt whether it will be very popular, because while in flavor it is so like asparagus as to be hardly distinguished, it cannot be cultivated with the same ease as the asparagus. Nothing whatever is therefore gained, we do not add to the *variety* of our tastes, while we add to the trouble and labor of the garden.

Now the reverse of all this is the Patience dock, *Rumex patienta*. In flavor this is so much like spinage, that by the taste alone we should never recognize it, but yet we can tell the difference in eating, for the spinage has a certain grittiness which to many persons is annoying, and from which *Patience* is entirely free. It comes quite as early as spinage. Here in the vicinity of Philadelphia, it can be used all through April, which is all we can do with the other vegetable. Its great advantage over spinage is that it is a *perennial*, and like asparagus gives no trouble after once planted for a number of years. An annual forking among, and manuring just as in asparagus, is all the culture it requires.

It is a mystery to us why so useful a vegetable was ever allowed to go out of cultivation. It seems long since it was admitted as a regular garden crop. Abercrombie makes no mention of it amongst his list of garden vegetables, and those authors who notice it all speak of it as something "formerly cultivated." It was not without some difficulty that we could obtain a plant to experiment with, and by saving seed for a season or two, getting enough to make a bed of,—but now having given it a fair trial, we must say that we see no reason why it should not take its place in gardens as one of the most valuable of early vegetables.

MICE GNAWED TREES.

Few things are more annoying than to find in spring, some favorite tree girdled by mice. Many expedients have been resorted to in order to save them, and amongst these grafting a piece or pieces of bark over the disbarked places is most popular. We find however, in practice that this fails more frequently than it succeeds, from a shrinkage of the bark which not all the tying possible will prevent. It is a much better plan to get a piece of the wood as well as the bark, and insert it with a slight arch, and then tie across from the centre of the arch. This will keep the piece firmly in place. The edges of the inserted piece must of course be wedged so as to insert firmly under the bark and into the wood, so as the bark of the tree and inserted piece unite just as in common grafting. The whole may be covered with earth so as to keep out the dry air.

We give a cut of a plan proposed some years ago, by Mr. R. Cornelius, for grafting the grape.



The idea is precisely the same as here indicated for this girdling business.

In many cases it is not necessary to graft anything over the barked place in order to save the tree's life. Every one knows that a girdled branch will live one year, so will a girdled tree generally. The injury is generally at the surface of the ground,—and earth can be drawn easily about the wounded place. In a few weeks roots will push out from the injured bark, and the tree go on with but a very slight check. In such cases however, it is best at the same time to shorten back some of the branches. In fact the tree is nothing but a cutting, and has to be treated precisely as we would a cutting. It has no roots, and too much top will evaporate the juices too rapidly. We cut back to check evaporation until new roots push out.

MAHONIA JAPONICA.

Of all the beautiful things introduced from Japan during the past few years, none have more interest than the *Mahonia Japonica*. It stands our severest winters (Philadelphia) entirely uninjured, not a part of a leaf getting injured. These leaves are of a leathery texture, twice the size and thickness of the Californian (*Mahonia aquifolia*), and of a bright, shining green. Unfortunately, it is very difficult to propagate in quantity, as the plant makes but a few strong shoots a year. As soon as seeds can be had, they can be easily raised in that way, and then it will become common. Near Philadelphia, the flowers come out so early that they usually get caught by a late frost, but further down South it ought to do well in this respect. Here is a fine chance for our Southern nurserymen to make a good trade for their section.

NURSERY AUCTIONEERS.

We do not know of anything more absurd than a man who does not know a peach tree from a pumpkin vine, selling nursery stock by auction. Yet we see it everywhere in all our large cities and towns. The loss to those who have nursery stock to sell, is immense.

A nursery auctioneer would do an immense trade, and soon become rich, if he were a man of integrity, in whom the public and customer alike could place confidence. Why cannot our tree brokers, who have some experience in allied branches of trade, add this one to it, and send agents out when required.

Where are Wright, Dewey, Whitlock, Browning, and the rest? In England this has been found to be an excellent arrangement. There a candidate for the gallows would as soon expect some other than Calcraft to have the pleasure of hanging him, as a nurseryman to be sold out by any one than Prothero & Morris, who have been in this nursery auctioneer business for the whole English people for near forty years.

AMERICAN SUMAC.

We have on several occasions urged our people to attend a little to the mine of wealth about them in the shape of native sumac, instead of importing at the present prevailing enormous prices. We are glad to see that something is now being done.

Mr. A. S. McRae, Oil and Produce Broker, Liverpool, writes to the New York *Journal of Commerce* that he received a lot of American Sumac from Philadelphia, a sample of which was analyzed for him by Huson & Arrott, chemists of Liverpool, with the following result:

Tannin	20.80	100.
Sand	.75	
Vegetable matter	78.45	

On this result Mr. Macrae says: "The average of tannin in the best Sicily sumacs, as stated in my last letter, is 16 per cent. (authority, Professor Muspratt.) Our first commercial analyists have seen it as high as 26 per cent. (and this only one sample within the last twelve months,) and America (Philadelphia) is producing at 20 per cent. Now for value. The lowest sumacs of any kind yields 7 per cent. tannin, and sells at £8 10s. per ton—this is French. The Sicily sumac, giving 16 to 26 per cent., sells at £13 to £24 per ton. American, therefore, with 20 per cent. tannin, should command (and will in time) £16 per ton!"

The sumac sent from Philadelphia was the *Rhus glabra*, which abounds on dry hills from Canada to Florida, and may be had for the gathering. There is no doubt but a fine business may be done with it.

GRAFTING THE PEAR ON THE WHITE THORN.

Much attention is being given in some parts of the West, to grafting the Pear on the *White Thorn*. "*White Thorn*," with the English, is confined to one species of Cratægus—*C. oxycantha*; but here in our country almost all the species of Cratægus are classed as White Thorns, and one writer often does not mean by the same name the same thing. We have seen five different stocks used all as "White Thorns," and yet all having different ratios of growth, which will materially affect success, as the Pear seems to take freely on all the Cratægus tribe. The strongest grower of all these thorns is the *Cratægus coccinea*. This in the Western States is most commonly known as "White Thorn." It will often make a tree as large as a moderate sized Plum tree.

The next most vigorous is the *C. cordata*, its most general name being "Washington White Thorn." Then comes *C. tomentosa*, with its numerous varieties, common all over the United States, and known as "Black Thorn," "Pear White Thorn," and some others. The Cockspur Hawthorn, *Cratægus crusgalli*, comes next, and then then the English White Thorn, *C. oxycantha*.

A beautiful, small-growing Thorn, very vigorous in its shoots, and yet a low, dwarf-grower, is the *C. parvifolia*. We have not seen the Pear tried on this, but have no doubt of its success, and it would be just the thing for small dwarfs. We have seen it growing wild abundantly through



WALES' WEEPING NORWAY SPRUCE.

New Jersey, and it is no doubt plentiful South and Southwest.

We do not know what will be the effect of a general trial of the Thorn for a stock. It is not so easy to raise as Pear or Quince, and it has the disadvantage of being like the Quince, very liable to attacks from a borer. If it is found to do very well, and be really desirable as a successful stock, the English White Thorn, which can be imported in large quantities for a small figure, might be the best.

We are not sanguine, however, that any stocks yet named will supersede the common Pear and Quince stocks.

ENGLISH AND AMERICAN PEACHES.

It is one of the "curiosities" of gardening literature, that our English friends cannot be made to believe that their Peaches are inferior to the best American. True, the comparative ease with which America grows Peaches, throws much trash into market, which probably even an English hog would not eat; so that the average of the Peaches that find their way to market in England, is higher than the average of American market Peaches. But in selected fruit, for a fair competition, English Peaches would be simply "nowhere."

The following notice from the English *Journal of Horticulture* shows how deep-rooted is the conviction in England, that Americans don't know a good peach.

"MORMON PEACHES.—In vol. i. of the same work, Mr. Dilke gives the Mormons' opinion of our Peaches. By the way, I think it quite probable that but few of the "brethren" ever tasted a Peach in England. He says that the Peaches gathered from standard trees from Mormon gardens, were so mellow, that their flavor would reduce our English gardeners to despair. Moreover, his Mormon friends said that our English Peaches ripened against walls were roasted on one side and frozen on the other. Mr. Dilke should have tasted some well-ripened Peaches from an orchard-house before he wrote about 'mellow' Peaches.—PERSICA."

It is a curious commentary on this paragraph, that the large majority of the Mormons are English emigrants, and probably many of them whose opinions Mr. Dilke thought worth noting were "brethren," who had sat around the same mess of Peaches together with "Persica," and should know something of the things whereof they spoke.

It is a pity the Peach is so perishable that we cannot ship a few steamer loads to England. It was hard for England to come down on the apple question; but those Newtown Pippins, from the famous old Pell orchard, settled that question. An Englishman can rarely believe any one else's eyes but his own; but let him once see and be convinced by his own senses, and no one will more readily or more handsomely acknowledge defeat than he. We should like to show them some of our best Peaches.

WALES' WEEPING NORWAY SPRUCE.

In our first volume we had a drawing made of a very beautiful weeping variety of a Norway Spruce, raised by Mr. Wales. Unfortunately, an attempt to transplant the tree failed, and the stock became nearly lost. A young one had been raised however, and from this a fair stock has been propagated, and we hear that in 1870 it will be put on market. We do not know anything more beautiful in its way than this, and we are very glad that it has been preserved, as knowing that the original plant was lost, very little public attention has been given it; hence our engraving has been probably forgotten. We reproduce it on the opposite page, as under the circumstances it will have all the freshness of an original.

SCRAPS AND QUERIES.

GROWING GOOSEBERRIES.—*B. V. F., North East, Maryland* asks: "Can gooseberries be grown without mildewing? I have tried repeatedly and failed. I am told that this is always the case; I want to grow for market. I see plenty in the Philadelphia markets. How is it done? Some body must grow them."

[Just so. Nothing is easier than to grow gooseberries. It is a mountain fruit, and does not like a *hot soil*. Plant it so that the hot sun will pour down on the *clearly cultivated* earth, so hot that you can fry a beefsteak or poach an egg on it, and you cannot get gooseberries. But set your plants across the lot in a pretty thick row, and

pile up about the plants five or six inches deep of old brush wood, old corn roots, old leather boots, pots, or kettles, even if you cannot get anything else, so that the roots will always be near the surface, and yet cool; and we will guarantee you a fortune, if you choose to plant enough. In the best gooseberry plantations of Philadelphia, it is no unusual sight to see rows of them which have been in one place perhaps twenty years, so mounded up with this rubbish, that they look as if they were planted on ridges two or three feet above the level of the earth, and every year bearing abundantly. Not only in the gooseberry, but in all fruits, the public must come to this great fact, that their roots must be kept *cool and at the surface.*]

Variegated Vines.—*Mrs. M., Abingdon, Virginia*: "I have tried to make a border of the variegated Honeysuckle around a bed of Hydrangeas, thinking the effect would be very pretty; but the sun seems to burn the leaves, and the plants look shabby. I am told there is a variegated Ivy which will not burn. Is it so, and can it be had?" [We suppose the Gold Veined Honeysuckle is referred to. It burns as described also here, unless in shady situations; but as *Hydrangeas* are spoken of as doing well, we should suppose the Honeysuckle would do well with it, as both like partial shade.

There is however an Ivy variegated *with white* in most full nurseries; but it has the habit of *going back*, that is in time it produces only the green leaves. We have however seen another variegated kind, in Mr. Geo. Such's collection at South Amboy, in which the leaves come out green, but as they mature become *penciled* with white. This seems to endure the sun pretty well. These are the only variegated Ivys we know.]

Paradise Apple Stocks.—Considerable discussion has taken place in England, as to what is the Paradise stock, and whether or not it is a distinct species or marked variety. The general impression has been that it is a wild form from Russia. M. Decaisne says about this:

It is by no means proved that the P. Malus præcox of Pallas is a wild species peculiar to Russia; the contrary seems shown by the total absence of any Russian name for the plant, and which it would certainly possess if it were wild. Pallas himself simply calls it by German names, while the common Apple and the Malus baccata have Russian, Mongolian, Tartar, and other vernacular appellations.

It is curious what strange notions often prevail about species. One finds an extra curl in a leaf, another an extra hair or two on the stem, and then imagine they have another thing. In this Paradise case, belief is general that it is a distinct species, because it is more readily raised from cuttings than the common Apple. The same reasoning would make the single Camellia a different species from the double, because it can be struck easy enough to make it profitable to graft the double ones upon. On this matter M. Decaisne has some pertinent remarks. He says:

In my own opinion there is only a single species of wild Apple in Europe, and this tree varies like all others. Nature has not two methods of procedure. She carries on her operations in the fields in the same way that she does in our gardens. She multiplies species by modifying more or less profoundly their forms. This is a point which seems too often ignored or forgotten. It is a mistake to suppose that our wild Apples can be divided into two well-marked groups—the one with pubescent leaves and sweetish fruits (Malus communis), the other with glabrous leaves and sour fruits (Malus acerba). No line of demarcation can be observed when numerous specimens from different localities are examined. I have before me bunches of wild Apples bearing fruits and leaves, some of the latter glabrous, the others downy, although all the fruits are yellow, and have already pointed out that for 300 years the Apple has been propagated by cuttings: a race has been established. Gardeners are too much inclined to dogmatize, and to take the exception for the rule. When they see that a particular variety does not succeed with them, immediately they jump to the conclusion that it is degenerating, and that it is so everywhere. There have been no important and comparative experiments whatever on the grafting of the Apple or of the Pear; all that has been done in this direction has been confined to individual observation, the results of which have been taken as proved without verification. What nonsense has been printed on the subject of the degeneration of varieties, and of their more or less complete recovery on the Paradise or on the Doucin, and on the free stock or on the Quince, in the case of the Pear.

To Correspondents.—We have to lay over for next month some replies to correspondents, which require some consideration. We may say that we are very much obliged to those friends who send us *marked papers* from their district in which may appear anything of interest to the progress of Horticulture This species of attention from our friends has much increased of late, while the receipt of long essays has rather fallen behind. This gives us much more variety, and is perhaps more in keeping with what a horticultural magazine should be,—*an improver*, and not a mere teacher of the rudiments of gardening, which can be easily obtained from elementary horticultural works. Yet we are always glad to hear in any way from our friends,

in either long or short articles; and now that the busy season of gardening operations is passing, and the cool summer evenings coming on, we hope to hear more frequently from our friends all around us, as to what is doing in their immediate vicinity. People are deterred from writing, fearing they have *nothing new;* but often this is just what friends at a distance want.

The Oracular Dandelion.—It has been well remarked by thinking men that the practices of an age will exist in the future, long after the reasons which instigated them have been forgotten. Thus the worship of the gods by the ancient Greeks originated at first in the simple necessities of language. *Words* applied to heavenly bodies, derived from human experience, became at last the *things* themselves. We see this repeated every day in a smaller style Children blow at Dandelion seeds, not one in ten thousand knowing why they do so. The origin of this is thus given by an old writer:

"Are you separated from the object of your love?—carefully pluck one of those feathery spheres; charge each of the little feathers composing it with a tender thought; turn towards the spot where the loved one dwells; blow, and the little aerial travellers will faithfully convey your secret message to his or her pet. Do you wish to know if that dear one is thinking of you, as you are thinking of him or her, blow again; and if there is left upon the stalk a single aigrette, it is a proof that you are not forgotten." The author adds, "but this second trial must be conducted with great caution. You must blow very gently; for, at any age, even at that which love renders most resplendent, it is wrong to dispel too rudely the illusions which embellish life."

California Nutmeg.—The agricultural papers are filled with accounts of the *nutmeg* being found in the Sierra Nevada range of Mountains in California, and are looking to it as one article of trade over the Pacific Rail Road just finished. This *Nutmeg* is a species of the Yew family, *Torreya myristica*. It resembles in many respects the true Nutmeg or *myristica*, but we do not know that its qualities will make it a perfect substitute for the true Nutmeg of the Malaccas. We should like to have more information on this point.

Annual Root Fibres.—Last month a Brooklyn correspondent kindly informed us that the *Gardener's Monthly* was voted a "humbug" by some of the brilliant luminaries who, as we understood, make a weekly dazzle about the "Farmers Club," because we teach that *root fibres are annual*. To be sure we are not able to point to any "authority," and if we could always do this for everything, we should think the *Gardener's Monthly* of little use,—*Hash* does not suit our readers.

It appears however, these ideas are progressing, and we shall soon have the requisite "authority" for them. A very intelligent writer on Vegetable Physiology in our sprightly young contemporary the *Lancaster Farmer*, says:

"To have as much of a growth in the root each year as there is in the branch, would make too much root, and throw it out of proportion as well as out of character. To meet this emergency during the period of active vegetation, there are *fibrils*, or *hair-like rootlets* thrown out from the main branches, which are simply elongations of the cells of which the surface of the root is composed. These rootlets form an immense absorbing surface. They do not interfere with the natural growth of the root, but live during the active circulation of the plant, and when vegetation ceases in the fall they die and are destroyed."

The Skepticism of Science.—Scientific men are hard to be convinced of anything that does not directly fall in with their own peculiar line of observation. This is well illustrated by M. Decaisne, a noted French botanist. M. Carriere, another French writer of some celebrity, recently wrote a paper on the *Raphanus raphinastrum*, an allied species to the one from which our common radish was "improved from." He gave an account of some carefully conducted experiments, by which, after a series of years, he obtained from a hard, wiry root, soft cellular ones, just like the other radishes, with a "flavor between a radish and a turnip," and gave with his paper, *drawings of the roots so obtained.* M. Decaisne, in a paper to the Royal Horticultural Society, England, writes that *he does not believe it.*

We give the following extract, in which well ascertained facts are mixed up with visionary notions, and then, skilfully placed on the same parallel, the whole doubled together. M. Decaisne says:

I have accumulated materials which do not permit me to adopt the theory of the transformation of one species into another, though I admit that species are very variable. The "Malus" remain Apples, as the 'Pirus" remain Pears, in spite of the diversity of their forms and the infinite number of their varieties. Neither do I believe in the metamorphosis of Raphanistrum into Raphanus, any more than I have credited the change from the wild form of the Carrot into the yellow Carrot, or that of the wild Cabbage of our chalk cliffs into a cultivated Cabbage, or that of Oats into Rye, that of Ægilops into Wheat, &c:, of which the journals contain so many accounts. Plants do not get so mixed up in Nature.

Horse Radish Plants.—*B. S., Brooklyn. N Y.* There are many plans of setting out Horse Radish. The best one is to cut the roots into pieces of about an inch in length, make a hole, about one foot deep, with a crowbar, let the small piece in, *down to the bottom*, and then with very rich earth or manure from a wheelbarrow, fill in the hole. The sprout will come up through this, and make a *clean, straight* growth. one of the merits of good Horse Radish. You ask "whose method" is the best. We do not know that this plan has anybody's particular name. It is, we think, originally a German plan. We believe we have given it long ago in the *Gardener's Monthly*. It is not, however, found in the regular gardening books, and if you want a name for it, you may call it the *Gardener's Monthly* plan.

Burning of the St. Louis Academy of Science.—This, the finest scientific institution in the West, has suffered a severe loss by fire on May 10th, ; nearly the whole collection has been consumed, the Library however pretty much saved, many of the books damaged by water. What with the loss of the Smithsonian, the Chicago, and the Portland collections within the past few years, our scientific institutions will see the necessity of taking unusual precautions to ensure the safety of the valuable specimens entrusted to their care. Dr. Shuman, the well known geologist, who did so much to establish the St Louis Society, died but a few weeks previous to the fire.

The Black Knot.—*R. B., Cleveland, Ohio,* says: "I see you talk about the Black Knot being caused by a fungus, you can easily convince yourself that you are in error by opening a few knots, you will find insects in all of them, plainly showing that this is the cause." [Well! Well! We get almost disgusted with editing a gardening journal sometimes. We thought we had pointed out how this is a fallacy over and over and over again, aye tenfold and over that!

Perhaps if our correspondent finds maggots in a dead dog, he "knows" that the insects made the carcass? This we know smells rather strong, but it is the only way we can get ideas at times into some people's heads.

The Oak Silk Worm.—In the *Journal of the Royal Dublin Society*, is a very interesting paper by Dr. De Picci, on a Japanese silk worm which feeds on the *oak*. It is called *Bombyx Yamamai*. This worm was known to the naturalist Thunberg. at the end of the last century. The Japanese have guarded this worm most jealously, keeping it expressly for silk, for the use of the Tycoon. Every attempt to procure it has failed, as the Japanese have refused every advance to part with it. The "happy despatch" availed any one detected in carrying off the eggs. The Emperor of the French tried his diplomatic hand, and that also failed. One of his subjects, Dr. Pompe Van Voort, has, however, succeeded, in smuggling it through Japanese law, and the insect is now in Europe. It is considered a great thing in Europe, as the silk is much finer than that obtained from either the mulberry or the ailanthus silk worm ; while the abundance of the oak in many parts of Europe will afford cheap food for it.

Attempts have been made to raise them in Ireland, where from the similarity of climate to that of Japan, it was supposed they might do well. The result has exceeded all expectations and great good is expected from their introduction. The chief difficulty found was that the eggs hatched rather before the leaves of the Irish oak put out, but this is a point which will be in favor of America, when the worm shall have been introduced here.

Barren Polyanthuses.—Some surprise has been occasioned by our stern correspondent Joseph Amram's remark that Polyanthuses will not fertilize by their own pollen A recent number of the *Gardener's Chronicle*, has a note confirming the observation. A correspondent says:

I have lately become a grower of Polyanthuses. Can you inform me in the *Gardener's Chronicle* if it is necessary to sow any of the pin-eyed flowers to impregnate the thrum-eyed flowers, as I am in doubt whether the pin eyed flowers are male or not? *R. B.* [We leave our floricultural friends to answer the above questions from their own point of view. In the mean time we would refer our correspondent to the elaborate experiments of Mr. Darwin, published in the 'Journal of the Linnean Society,' and alluded to in our columns, 1861, p 1048. The general results of Mr Darwin's experiments are that the greatest number of good seeds are produced when pollen from a 'thrum-eye' variety is placed on the stigma (or pin head) of the pin-eyed flower, or *vice versa*. When pollen from either a thrum-eyed or a pin-eyed flower is placed on the stigma of another flower of the same variety, the results are not so satisfactory, and still less so when a flower's own pollen is used to set its own stigma. Eds.]

Pilea Muscosa.—We recently gave some notes of curious phenomena connected with this little plant. The *London Cottage Gardener* has the following note in reply to a correspondent about the same thing:

"Artillery Plant (*J. W. C.*).—Also called the Pistol plant, is Pilea muscosa. It is a small stove succulent, requiring the same treatment as the Cacti, and is readily propagated by cuttings. It looks like a Lycopodium, and if the flower buds are wetted the anthers burst, and the pollen is discharged in a smoke form."

Commission Men —A correspondent of the *Country Gentleman*, says that some commissionmen have a plan of *averaging sales*, and sharing out the proceeds to all consignees alike, no matter about quality. "A whose grapes are put up in extra style, and sell for say 20 cents per pound, gets only the average of the day's sales, say 15 cents, while B, who puts up, or rather *does not put up* his grapes, but just tumbles them into big boxes, whose fruit is sold for 10 cents, gets 15 cents also"

This is an important matter to those who have fruit to sell, and care should be taken in choosing an agent to whom to send, to have an understanding about the mode of doing business.

Bunched branches —Branches which take a fancy to bunch out like a crow's nest on different kinds of trees are not uncommon, but no cause has been assigned to it. At a recent meeting of the Royal Horticultural Society, the matter came up.

"Dr. Master then laid on the table some specimens of fascinated branches of Sycamore which had been sent by Mr. D. T. Fish, and stated that one probable cause of the formation of such growths was some check given to the terminal bud, resulting in the formation of a large number of secondary buds, which became fused together as they grew, and ultimately became separated one from the other.—Rev. M. J. Berkeley stated that he had ascertained in one instance, in a species of Sambucus, that a parasitic fungus (Æcidium) was the cause of the mischief.—In reply to a question, Dr Masters stated that the condition was occasionally reproduced in seedling plants, but was not, so far as he knew, perpetuated by grafting or budding. Various speakers alluded to the frequency of the occurrence in some plants, as the Ash, the Cotoneaster. &c Allusions was also made to the Cockscomb and the Sedum cristatum [M. Lemaire, of Ghent, has recently called attention to the similar malformation which exists in some Cactuses, and which he calls Lophocauly.—Eds."]

The Spading Fork.—We are glad to find that our effort to introduce this implement as a substitute in so many cases for the clumsy spade, has been so generally successful. We see them now in general use A correspondent of the *Journal of Agriculture*, says of it:

"I know of no tool that has been introduced within a few years that is so useful as the spading fork. On an average, I believe a man will do one third more work with it than with the common spade, and do it easier and better also. I speak of digging over the garden, preparatory to planting, or working among currant bushes and the like; and then for digging potatoes, I have found it one of the best tools I ever used. It may be used also in the cultivation of any garden crop when one has no horse, or has not room to use him. There are always little patches that must be worked by hand, and no tool is so useful for this purpose as the spading fork."

We have had some difficulty in getting them good—many breaking off with heavy work at the neck. There is a kind found in some of the hardware stores of Philadelphia, made by the "Williamsport Fork Company,', which are as near perfect as anything can well be.

LETTUCE.—*H. B., Essex, Mass*, says: "Have any of your many correspondents ever tried *beds* for growing Lettuce, Cucumbers, etc., heated by hot water? If you have any information on the subject in any back numbers will you please mention it through the magazine or otherwise. I want something of the kind, to grow for market, some plan that will give me more surface than is given in the ordinary pits. I have a plan of my own, but still I would like the experience of others first."

[There has been little done in this way. Let us have your plan.]

NAME OF PLANT.—*W. L. A., Johnstown, Cambria Co., Pa.*: "Enclosed a small branch of an evergreen growing in some parts of the Alleghany Mountains. It appears to be rather a trailing shrub, and propagates itself freely by layering. I think it is very beautiful, and would be very glad to know if it is a Taxus or an Abies."

[*Taxus canadensis*, or ground Hemlock, a beautiful plant, and should be more cultivated.]

PROTECTION AGAINST HORTICULTURAL SWINDLERS.—We recently stated that if nurserymen would guard themselves againt swindlers the best thing they could do, would be to induce all those over whom they had any influence, to subscribe to agricultural or horticultural papers. The *Rural New Yorker*, seems of the same opinion. It says: "That the best protection farmers can have against swindlers is their own protection; let them well inform themselves and not be swindled by plausible men. It is well to try new things, but it is not well to invest a large sum of money in such new and untried things."

THE PAULOWNIA.—As we write, (5th of May,) is perfuming the air for many yards around with the delightful odor of its brilliant large blue blossoms. What a pity that a tree which grows so fast, and has so much floral attraction, should be so excessively ugly. But so it is, nature makes nothing perfect."

GRAPE CUTTINGS.—*Hopkinsville, Ky.*, asks: "Will you please to state through the columns of your excellent Journal, what constitutes a grape vine? The difference between a grape *vine*, and a grape *cutting*? Whether a piece of grape wood that has lain in the earth one season without forming any roots, is entitled to the appellation of *grape vine*, or whether it is only an *old wood* cutting? Whether such a piece of wood is superior in any respect, or any more likely to grow when planted again than a cutting of young wood or the growth of the previous season? With any explanation relative to the matter that you feel disposed to give."

[A piece of old wood that has been one year in the ground, is in a better condition to root, than a new piece fresh taken off; but *without any* roots, is clearly not *a plant*. As a question between logicians, we suppose if a quarter of an inch of root could be discovered, the cutting would be proved to be a plant; but as a question between buyer and seller, a cutting is not practically a plant, until it has made roots enough to enable the thing to grow without the necessity of its making any more *roots from the main stem*. In other words if it has not roots enough to support growth without the necessity of making more first, it is no plant, and we think any jury should so decide.]

THE STARK APPLE QUESTION is getting quite lively. We have endeavored to give both sides fairly, leaving out of question our own decided opinion that they are identical. The latest phase is that the "Pomological Society must have been humbugged by false Starks;" but Mr. Hovey, in the *Horticulturist*, has come up to this latest Goliath of an argument, by showing that the *descriptions* of the Stark and that of the Pennock, by Warder, are *materially* identical. We think the pebble has sunk into the giant's forehead. If the Stark is proved distinct, the next question to come up will be, "is the Pomological Society humbugged by descriptions?" One way or another, the committee is safe.

THE MEXICAN EVERBEARING STRAWBERRY.—Our Western exchanges have been filled with accounts of a new variety under the above name. So far as we are able to judge by the engravings given, we be believe there is some novelty in it, but of how much value, not having seen any specimens, we are not prepared to say.

MUSCAT ST. LAURENT GRAPE.—This grape is of French origin. Its chief recommendation is that it posseses in flavor that delicious muscat tone which belongs usually to those which require a far higher temperature in order to perfect them for the table. The berries are of a greenish yellow, not large, nor are the bunches large. It is more than ten years since I procured a plant, yet I have not met with it elsewhere under cultivation, so that I think its value is not quite appreciated, or it would be more generally grown. For a cool or orchard house it would be found invaluable, as it does not require fire heat to finish it. The foliage is small compared with other kinds of vines, but the shape of the leaf is rather interesting, as in its formation it differs so much from that of other vines as to have attracted the notice of Mr. Hart, R. A., one of our most eminent artists, when passing through the house where it was cultivated with other vines.—*Cor. of Gar. Weekly.*

WOMAN'S RIGHTS.—The Reverend John Fountaine, of Southacre, Brandon, Scotland, has published "a new method of growing fruit," which is intended for the perusal "solely of gentlemen."

What there can be in fruit growing which is not fit for ladies to read, is a subject which should have the immediate attention of our "Sorosis" Societies.

A BEAUTIFUL YUCCA.—*F. A. N., "Rosensink Gardens," Magnolia, N. C., May 13th*, 1869, writes: "As your *Monthly* makes its regular appearance and I note with pleasure any remarkable plants noticed, I have taken the liberty to say that I have growing in front of my office one plant of the Yucca Stricta (or Bean Grass,) 9 feet high and on it 446 buds. Can any of your friends beat this?

THE BEST STRAWBERRY.—The Strawberry season is now opening. We shall look forward with much interest to a solution of the vexed question, what is the best? We notice that almost all our exchanges continue to say "Wilson is the best."

TOMATOES.—*Brooklyn Subscriber:* As in Horseradish, it is hard to tell the *best* way to get good Tomatoes; but a good way to get *good* Tomatoes, is to tie them up to strong stakes, as recommended in this Journal last year.

BOOKS, CATALOGUES, &C.

HOOPES' "BOOK OF EVERGREENS."—It is not often Mr. Barry is caught sleeping, but surely he was not as wide awake as usual when he wrote that criticism of Hoopes' views of *Pinus Benthamiana* for the *Journal of Horticulture*. Because "Carriere and Gordon express no doubt as to the distinctness of Pinus ponderosa from P. Benthamiana," the inference is taken that Mr. Hoopes must be wrong. Neither of these two men are botanists, although they have made up readable works. Mr. Hoopes has the advantage of being a botanist of good standing, and the "Book of Evergreens" in Europe is admitted to be of greater authority than either of the other two. The variations in the leaves of these two Pines are no greater than often take place in a bed of seedlings. Even Mr. Barry's Tom Thumb is from a bed of American arborvitæ.

Of course the question is one of specific identity. If every leaf variation made a species, we should soon have plenty of them.

We cordially agree with Mr. Hoopes' view that Pinus Benthamiana and Pinus ponderosa are *essentially* the same.

CATALOGUES.—*Graves, Selover, Willard & Co., Geneva, N. Y.*—We have taken several occasions to approve of the general accuracy and beauty of the catalogues of the American nursery men. A few years ago, they were quite the reverse of this—now they compare favorably with any in Europe. We are reminded again of it by this very nice descriptive catalogue of ornamental trees and shrubs. It is very creditable to the enterprise of this energetic firm.

GUIDE TO THE STUDY OF INSECTS.—By Dr. Asa Packard, of the Essex Institute.

Part sixth and seventh of this valuable work is on our table. It is filled as usual with beautiful engravings of the insects necessary to illustrate the different orders and sections, the descriptions of which are in so popular a style, as to commend the study of this branch of science to the million.

NEW AND RARE PLANTS.

ECHEVERIA METALLICA.—For edging, and various other purposes, the broad bronzy leaves afford a very striking and beautiful contrast, quite distinct from any other plant yet used for bedding purposes.

IRESINE LINDENI.—This fine ornamental foliage plant, which has been justly termed "the gem of the season among bedding plants," has obtained prizes at Brussels, Liege, Louvain, and the Crystal Palace, Sydenham; also certificates of Merit from the Societe Imperial d'Horticulture of Paris, Royal Horticultural Society, and Royal Botanic Society, Regent's Park.

NEW NOSEGAY GERANIUMS.—*Lizzie* (*G. S.*).—A novel colored and desirable variety, having salmon colored flowers, suffused with orange in the centre, dashed with violet at the tips. Quite new in color, and a fine acquisition to the nosegay class. Fine habit; foliage heavily zoned.

Masterpiece (*G. S.*)—This flower is of novel color, the pips large, salmon-crimson around the centre; the edges of the young blooms orange-crimson; immense trusses, and globular; foliage slightly zoned, extra fine habit.

Victor (*G. S.*)—Bright orange-scarlet flowers, large, and very double; free blooming, and the most compact and beautiful double variety yet raised.

STYRAX JAPONICA.—*Gartenflora*, t. 583. Styracaceæ. A pretty hardy shrub, growing 4 to 6 feet high, with elegantly spreading branches, bearing bright green elliptic-lanceolate leaves and a profusion of white flowers, resembling Snowdrops, from the points of the young branchlets. It should be a pretty object for forcing with such plants as Deutzia gracilis and its allies. A native of Japan, and introduced to our gardens by way of St. Petersburgh.

LEWISIA REDIVIVIA.--This is a plant supposed to be found in California or on some portion of the Pacific coast, we think it is known in Washington Territory, and also in British Columbia.

Dr. Hooker, of the Royal Botanic Gardens at Kew, London, says: "Among the plants eaten by the Kotanier, Colville, and other tribes in that part of British Columbia and Washington Territory, is the beautiful Lewisa Redivivia, the roots are gathered in great quantities, and boiled or eaten like Salep or Arrow-root. In this state they are not unpleasant to the taste, slightly bitter, but are valued by the Indians as a nutritious food for carrying on long journeys, two or three ounces a day being sufficient for a man, even though under great fatigue.

These Indians call it "*Spat Lum*" or "Ptleem-asd.ilse-ne-mare," and look upon it as one of the great gifts of the Supreme Master of life."—*California Farmer.*

MAGNOLIA CAMPBELLI.—*Flore des Serres*, t. 1282-5. Magnoliaceæ. A splendid deciduous hardy tree. with oval or ovate leaves, silky beneath, and immense flowers produced before the leaves, of a brilliant crimson externally, and a pale delicate tint of rose within. It is a native of the Sikkim Himalaya, at 8,000 to 10,000 feet elevation, and has been introduced by Mr. Bull.

LASIANDRA MACRANTHA.—The flowers of this plant are truly marvelous, 1½ feet in circumference! Are produced nearly throughout the year, and on plants when only an inch or two high. Some blooms of it were sent at Christmas to the Editor of the *Gardeners' Chronicle*, and the following remarks were made in the columns of that journal, January 2d, 1869:—

"We have before us fine blooming specimens of the noble 'Lasiandra macrantha,' sent us by Mr. Bull, which shows that the flowers of this grand plant may be had in winter as well as in summer, which is an additional recommendation. Notwithstanding what may seem to be an unfavorable season, the blossoms are even now nearly 5 inches across, and are of the richest violet blue, a tint which has not been reproduced in any of the illustrations which have yet appeared."

ACROCOMIA SCLEROCARPA.—*L'Illust. Hort.* t. 547. Palmeæ. An elegant stove-plant, attaining in age a considerable height, and bearing a head of spreading pinnate leaves, with the rachides and petioles aculeate, and the leaflets linear, taper-pointed, subglaucescent, and nearly a foot in length. It is one of the many Brazilian species of this noble family.

ALLAMANDA NOBILIS.—*Flor. and Pomol.* 1869, 25, with fig. Apocynaceæ. A fine-colored representative of this, one of the finest of all gay-flowered, stove, woody climbers. It has smooth, scandent branches, oblong, abruptly acuminate, membraneous leaves, and a profusion of immense, clear, bright yellow, agreeably fragrant flowers, pubescent outside, and remarkable for their broad, round, prominent segments. It was introduced from the Rio Branco, Brazil, by Mr. Bull.

ARECA AUREA.—*Flore des Serres*, t. 1738 Palmæ. A fine ornamental stove Palm, of erect habit, with gracefully spreading leaves, remarkable for the yellow color acquired by the stripes when grown in a temperate house. It is of light and elegant character, with pinnate leaves, having long, narrow distant leaflets. The plant comes from the Seychelles Island.

ARECA BAUERI.—*Bot. Mag.* t. 5735. A remarkably beautiful Palm, closely allied to A. sapida, and long confounded with it, but distinguished by its greater size, its larger and broader pinnæ, and more globose scarlet berries. It has a tall, clean, ringed stem, and a crown of elegant pinnate leaves, 6—9 feet long. A native of Norfolk Island.

BERBERIS WALLICHIANA.—*L'Hort Franc.* 1868, 269, t. 8. Berberidaceæ. A pretty bushy-habited, evergreen, hardy shrub, 6 to 8 feet high, with spiny branches, bearing in the axil of the spines a rosette of persistent, oblong, coriaceous, spiny-toothed leaves, and from the centre of the tuft a fascicle of clear pale yellow flowers. It is known in gardens as B Hookerii, and B macrophylla, and is a native of Nepal.

CARYOTA CUMINGII.—*Bot. Mag.* t 5762. Palmeæ. A beautiful stove Palm, with an erect trunk 10 feet high, and large, spreading, bipinnate leaves of a dark green, with the pinnules 8-10 inches long, subfalcate, obliquely wedge-shaped below, and erosely toothed upwards. The spadices hang in drooping tassel-like tufts from the axils of the leaves, those in the upper axil flowering first. Introduced from Singapore by the late Mr. Hugh Cuming.

COBŒA PENDULIFLORA.—*Bot. Mag.* t. 5757. Polemoniaceæ. A graceful, slender, glabrous climber, requiring a cool stove, the leaves formed of two pairs of small oblong acute leaflets, and terminating in a branched, tortuous tendril, and the flowers axillary, solitary and pendulous, on long peduncles, with a green campanulate corolla, having the tube an inch long, divided at the edge into five strap-shaped, pendulous, wavy lobes, 3-4 inches long, which give the flowers a remarkably distinct appearance; the filaments are red, and the anthers yellow. It comes from the mountains of Caraccas, at about 6000 feet elevation, and has flowered in the cool end of the Palm stove at Kew.

DELOSTOMA DENTATUM.—*Bot Mag.* t. 5754. Bignoniaceæ. A somewhat robust habited and handsome stove shrub, with large, opposite, oblong bluntly serrated leaves, and erect racemes of three or four subcampanulate blush white flowers, having a limb nearly 2 inches across of spreading orbicular lobes It is a native of Gualesca, near Cuenca, in Ecuador, and was sent by Prof. Jameson to Isaac Anderson Henry, Esq., of Edinburgh.

ERYTHRONIUM GIGANTEUM.—*Bot Mag.* t. 5714 Liliaceæ. A beautiful dwarf hardy perennial, producing a pair of obovate oblong leaves, blotched with dark brown, and a tall scape, supporting two or three large flowers, of which the petals are ovate lanceolate, recurved, white, yellow at the base, and marked with a transverse orange band. It is an old plant reintroduced from North West America

HYDRANGEA IMPERATRICE EUGENIE.—*Rev. Hort.* 1868, 469, with fig. Hydrangeaceæ. A hardy floriferous branching deciduous shrub, forming a bush, bearing leaves like those of H. Hortensia, and flowers of two forms, disposed in umbels, the external ones about an inch broad, its segments of a lively rose color, the internal numerous ones small, and of the same bright rosy color. It is a native of Japan, whence it was introduced to the French gardens by Siebold, by whom it was dedicated to the Empress Eugenie

HYPERICUM PATULUN.—*Bot. Mag.* t. 5693. Hypericaceæ. A fine showy hardy shrubby perennial, of dwarf stature, with red stems, bearing opposite oblong-ovate leaves, and terminal cymes of large bright yellow cup-shaped flowers. It is a native of Japan, and has been flowered at Kew.

PASSIFLORA TRIFASCIATA.—*L'Illust. Hort.* t. 544. Passifloraceæ. A rather interesting stove climber, of which the flowers are, we believe, not yet known, but which has the dark green trilobate leaves marked down the centre of each lobe by a broad band of reddish purple, the back of the leaf being of a deep sanguineous hue. Introduced by M. A. Verschaffelt, from Para.

PRIONIUM PALMITA.—*Bot. Mag.* t. 5722. Juncaceæ. A curious and not inelegant greenhouse subaquatic plant, with the habit of a Pine-apple and the flowers of a Rush. It has an erect shrubby stem, elongate ensiform keeled spinulose leaves, and a terminal erect panicle of glumaceous flowers. The Palmita grows in running streams in such masses as to form a sort of floating bridge, and the fibrous matter at the base of its leaves is used for brush making. A native of South Africa.

RHODODENDRON CAUCASICUM FLAVIDUM.—*Gartenflora*, t. 560. Ericaceæ. A handsome hardy evergreen shrub, bearing obtuse elliptic-ovate coriaceous leaves, and heads of several largish broad-lobed straw-colored flowers, thickly spotted on the upper segments with deep green dots. It will add a new and interesting feature to our showy hardy Rhodendrons. Native of Caucasus, and introduced to the St. Petersburgh Botanic Garden.

SPIRÆA PALMATA.—*Bot. Mag.* t. 5726. Rosaceæ. A beautiful hardy perennial, with bright red furrowed stems, palmately 5-7 lobed leaves, having ovate lanceolate sharply serrated lobes, and numerous corymbs forming a large broad head of deep crimson remarkably attractive flowers. A Japanese plant, recently distributed by Mr. C. Noble.—*Gar. Chronicle.*

DOMESTIC INTELLIGENCE.

THE CENTURY PLANT AT ROCHESTER.—The flowering of the Great American Aloe, known as the "Century Plant," has always been regarded with much interest, not only in this country, but in Europe. The flowering of the Messrs. Frost's plant brings to my mind some circumstances connected with these plants.

In the month of December, 1840, Mr. M. B. Bateham, now of Painesville, Ohio, then a partner of Wm. A. Reynolds of this city, conducting a seed business in the Arcade, under the firm name of Reynolds & Bateham, wrote to Hovey's Magazine of Horticulture, in Boston, among other items of a horticultural interest in Western New York, that, in the greenhouses of Jno. Greig, of Canandaigua, there was the largest plant of the striped-leaved Agave he had ever seen, and that Mr. Greig intended to take some measures to induce its flowering. The plant then, almost twenty-nine years ago, referred to, is, I think quite likely, the one about to bloom at the Messrs. Frost's.

I saw the Van Rensselaer plant, which has been referred to in your columns. Its flowering took place in the autumn of 1842. The N. Y. State Agricultural society was holding its second annual Fair, that year, at Albany, and it was while attending that Fair that I visited the plant in question. It was exhibited for the benefit of the Albany Orphan Asylum. After remaining in Albany till the public curiosity was satisfied, it was removed, some time in October I think to New York, to the seed store of Geo. C. Thorburn, in John street, and there exhibited for the benefit of the Albany Orphan Asylum.

The Van Rensselaer plant was the common green leaved one, not the variegated.

I think that the Frost plant is the first variegated leaved one that has ever bloomed in this country. [No.—ED. *G. M.*]

A few years ago there was in the collection of Ellwanger & Barry, a very large plant, 30 or 40 years old; but it was destroyed for the want of a suitable place for it, and on account of the difficulty of handling it.

I would take this occasion to suggest to the Messrs. Frost to erect a tent on their lawn, under which to exhibit their plant. This is the only place its grandeur can be advantageously seen. The season during which it will be in bloom will be favorable for this arrangement.

P. BARRY.

—*Rochester, N. Y. Express, May* 11, '68.

THE RED CANADA APPLE.—A farmer of Oakland county, Mich., sold a load of Red Canada apples, in Detroit, on April 28th, at seven dollars per barrel.

In Michigan, Illinois, Indiana, etc., the Red Canada is mostly known by the synonym of "Steele's Red Winter," under which name it is very popular in the markets, and large orchards of this variety have been planted in these States during the past decade, and it is becoming more highly prized every year.

The Baldwin and Red Canada are distinct varieties, but in some places they have been confounded with each other on account of the synonym, "Steele's Red Winter" being attached to both. The Baldwin, which is exceedingly productive in New York and the New England States, is known there as Steele's Red Winter. In Michigan, Illinois, Indiana, etc., the Red Canada is known as Steele's Red Winter, a name which in these States is never applied to the Baldwin.

Fruit dealers say that they can get a more ready sale for red apples than for those of any other color, and latterly orchardists have found out this peculiarity of the demand, and have planted and are planting largely of red varieties, such as the Baldwin, Red Canada, Snow Apple, Spitzenberg, King of Tompkins County, etc. The latter is a splendid apple, but in some localities the tree is a sparse bearer. It is said to have originated in Tompkins county, New York. The Red Canada is better suited to the soil of Michigan, Illinois, etc., than the King of Tompkins County, although the latter is a fine fruit, well worthy of a place in every orchard.—*Western Rural.*

PURDY & JOHNSTON'S NURSERIES.—A correspondent of the *Country Gentleman* thus writes about the nurseries of Purdy & Johnston, Palmyra, N. Y.:

"I found their grounds about three miles south of the town, on the road to Canandaigua. The grounds are protected by hills and woods on the north and west, and comprise 130 acres, 60 of which are now planted with the various kinds of small fruit, to be increased to 100 acres this spring. They have been on the place I think but two years, and their grounds are not yet all improved. They have, to bear next year, 36 varieties of strawberries, 16 of raspberries, 6 of blackberries, 20 of grapes, together with currants and gooseberries. It would do a great many of our farmer friends good, who think they cannot take care of a fruit patch large enough to supply a family, to see so many acres kept as clean as their corn-fields were just after hoeing. They believe in hill culture for strawberries, they being set in rows about 3½ feet by 1; but as their chief business is the propagation and sale of plants, they do not adhere strictly to this system, but let the runners root around the hills, still keeping the rows open to admit the passage of the cultivator.

SOME STRAWBERRIES.—We notice that some of our exchanges are publishing a paragraph about a strawberry vine (of the Wilson Albany variety) down in North Carolina, upon which were recently counted between ninety and one hundred berries. This is a fair exhibit for one vine, but it falls far behind what can be shown in this neighborhood. On a well cultivated farm in Chesterfield county near this city, may be found as fine a growth of vines and as promising a prospect for fruit as one could well desire to see. The proprietor cultivated the strawberry in hills—keeping the vines clear of weeds as well as of runners, and the consequence is a manifest improvement in the growth of the vine, as well as in the yield of fruit. On a single vine of the kind above mentioned, the proprietor, a day or two since, counted *one hundred and eighty-four* perfectly formed berries, besides some twenty or thirty blossoms. When properly attended to, the Wilson strawberry is a most prolific bearer, as is shown by the above, and as can be proven by every person who has a square of ground to try it on.—*Petersburg Index.*

BIG APPLE TREE.—Probably the largest apple tree in Virginia, is now standing, in a dilapidated condition, on the farm of Mr. O. W. Purvis, in Albemarle county, three miles south of the Southwest Mountains, near the three-notched road to Richmond, and two and a half miles from Keswick Depot. The soil that produced this noble old patriarch is loamy, of a mulatto color, and a little mixed with small yellow gravel-clay subsoil, and immediately the only bed of limestone between the ocean and the mountains. This tree is upwards of three feet in diameter three feet above the ground—it has three main prongs branching off some five feet above the ground, and its present height is not less than thirty-five feet. One of its large branches has decayed and fallen off. The tree still bears fruit of a medium size and indifferent flavor, but makes good cider.—*Southern Planter.*

APPLES IN NEW JERSEY.—The Middlesex Farmers' Club recommend the following varieties of apples as successfully grown in the vicinity of New Brunswick: The Orange Pie Apple, Ladies' or Maidens' Blush, Seek no further, Michael Henry, Baldwin, Newark Winesap, Rhode Island Greening, King of Tompkins County, Red Cheek or Monmouth Pippin, Sweet and Sour Bow, Pomme Royale for Dial Apple, Orange Pippin, and the Golden Sweet, Hubbardston Nonsuch, and Red Astrachan.

Hon. Marshall P. Wilder was President of the Norfolk county, Mass., Agricultural Society for twenty years, resigned his position at the recent annual meeting of the Society, at which meeting resolutions of thanks for his services were adopted.

FOREIGN INTELLIGENCE.

TULIPS.—Notwithstanding the many new varieties of Tulips, the old ones seem to retain their supremacy. The *Gardener's Chronicle* noticing the various Tulip collections near London, gives as the best, the following very old kinds: Rex rubrorum, Tournesol, Rosine, Titian, La Candeur, new yellow Tournesol, and Roozenkroon, double; Vermilion Brilliant, and Yellow Prince, single.

A GOOD LATE-KEEPING HOTHOUSE GRAPE.—A report of a recent meeting of the Royal Horticultural Society says:

Mr. W. Gardiner, gr. to E. P. Shirley, Esq., Eatington Park, Stratford-on-Avon, sent one bunch each of Lady Downe's Seedling and Kempsey Alicante Grapes in fine condition; the flavor of the Lady Downe's Seedling, especially, was remarkably fine, considering that they must have been kept at least six months; a Special Certificate was awarded."

TRUFFLE HUNTING.—The pig was formerly employed in all parts of France in hunting for this precious tuber, which has just appeared in the Paris markets, and in an abundance which has not been equalled for the last 60 years. There is a celebrated caricature of Gavarni's, in which two women of the people are represented as discussing the vintage. "They say there will be plenty of wine this year," says the first lady; and the other replies, "How shall we get trounced!' Looking at the plentiful supply of Truffles, *gourmet* and *gourmond* will probably exclaim, "How we shall suffer from indigestion!" In Provence, the ancient country of the troubadour and ballad, the pig is still employed in searching for the Truffle. It is a lean sort of animal, very clever in its way, and is called a *porc de course*, or racing pig, who is duly trained to his business, and for every tuber he discovers he is rewarded with an acorn—he finds a fish, and he is offered a serpent. In the department of Haute-Marne the pig has been replaced by the dog; the ordinary cur of the country is trained for the pursuit, and readily masters his craft; his training is neither long nor costly, and his education consists in his being kept for a certain time without food, and then set to discover a Truffle placed with a piece of bacon in a sabot filled with earth. As soon as the dog has found the Truffle, he is rewarded with a small bit of bread, and the manœuvre recommences. After a few days of this exercise the dog is generally found to be sufficiently trained, and his value reaches as high as 4*l.* at times. There are peasants who make this system of education their trade. A curious fact has lately come to light, which proves that the dog and the pig have not the entire monopoly of finding Truffles. The Truffle poachers trust to a certain fly to guide them to the beloved tuber. A paper an the subject of this fly has been addressed to the Botanical Society of France by M. Gubler, who reports that the insect is large, that he ever returns to the same spot, and, after numerous circuits, settles, and where he settles, a Truffle is sure to be found.—*Land and Water, Nov.* 7.

PASSION FLOWERS.—It is well known to hybridizers that some species of Passion flower do not set their fruit if fertilized with their own pollen, while they readily do so if the pollen is from an allied species. Thus Mr. Munro has forwarded us a fruit of Passiflora alata fertilized by P. cœrulea, previous attempts to set the fruit with its own pollen having failed in his hands as in those of other experimenters. It may be interesting to cite the summary of evidence on this point, drawn up from the records in our own columns, and from other publications, by Mr. Darwin, in that storehouse of facts for physiologists and thoughtful cultivators, the "Variation of Animals and Plants under Domestication," vol. ii., p. 137:

"In the genus Passiflora it has long been known that several species do not produce fruit unless fertilized by pollen taken from distinct species; thus, Mowbray found that he could not get fruit from P. alata and racemosa except by reciprocally fertilizing them with each other's pollen. Similar facts have been observed in Germany and France; and I have received two authentic accounts of P. quadrangularis, which never produced fruit with its own pollen, but would do so freely when fertilized in one case with the pollen of P. cœrulea, and in another case with that of P. edulis. So again, with respect to P. laurifolia, a cultivator of much experience has recently remarked that the flowers 'must be fertilized with the pollen of P. cœrulea, or of some other common kind, as their own pollen will not fertilize them.' But the fullest details on this subject have been given by Mr Scott; plants of Passiflora racemosa, cœrulea, and alata flowered profusely during many years in the Botanic Gardens of Edinburgh, and though repeatedly fertilized by Mr. Scott, and by others with their own pollen, never produced any seed; yet this occurred at once with all three species, when they were crossed together in various ways. But in the case P. cœrulea, three plants, two of which grew in the Botanic Gardens, were all rendered fertile, merely by impregnating the one with the pollen of the other. The same result was attained in the same manner with P. alata, but only with one plant out of three. As so many self-sterile species have been mentioned, it may be stated, that in the case of P. gracilis, which is an annual, the flowers are nearly as fertile with their own pollen as with that from a distinct plant; thus 16 flowers spontaneously self fertilized produced fruit, each containing on an average 21. 3 seed, whilst fruit from 14 crossed flowers contained 24. 1 seed. Returning to P. alata, I have received (1866) some interesting details from Mr. Robertson Munro. Three plants, including one in England, have already been mentioned, which were inveterately self-sterile, and Mr. Munro informs me of several others which, after repeated trials during many years, have been found in the same predicament. At some other places, however, this species fruits readily when fertilized with its own pollen At Taymouth Castle there is a plant which was formerly grafted by Mr, Donaldson on a distinct species, name unknown, and ever since the operation it has produced fruit in abundance by its own pollen; so that this small and unnatural change in the state of this plant has restored its self-fertility! Some of the seedlings from the Taymouth Castle plant were found to be not only sterile with their pollen, but with each other's pollen, and with the pollen of distinct species. Pollen from Taymouth plant failed to fertilize certain plants of the same species, but was successful on one plant in the Edinburgh Botanic Gardens. Seedlings were raised from this latter union, and some of their flowers were fertilized by Mr. Munro with their own pollen; but they were found to be as self-impotent as the mother-plant had always proved, except when fertilized by the grafted Taymouth plant, and except, as we shall see, when fertilized by her own seedlings For Mr Munro fertilised 18 flowers on the self-impotent seedlings, and obtained, remarkable as the fact is, 18 fine capsules full of excellent seed! I have met with no case in regard to plants which shows so well as this of P. alata, on what small and mysterious causes complete fertility, or complete sterility depends."

The relationship thus existing between grafting and fertility is a novel and most interesting fact, which will, we hope, urge on our experimentalist to renewed efforts If the scientific interest is great in such a case, are not the practical ends which may be confidently hoped for, at least as important in their way?

We may add, that an account of Mr. Munro's experiments was laid before the Botanical Society of Edinburgh last autumn, for a digest of which see p. 819. Mr. Munro's results are so beautiful, as well as interesting, that we trust he will persevere in his endeavors.—*Gardener's Chronicle.*

HORTICULTURAL NOTICES.

DAYTON, (O.,) HORTICULTURAL SOCIETY.

This seems to be a very prosperous institution. The meetings are held on the grounds of the leading members. The May meeting was held at the residence of Nicholas Ohmer, Jr., and from all accounts was a very pleasant affair. A correspondent who was present, describes the mansion as of brick, two stories high, and of the most approved style of latter day architecture, combining the useful, the ornate, and the convenient in such proportions as to leave little or no room for intelligent criticism. It is a very handsome structure, viewed from the avenue; and the furniture and adornments of the interior conform to a high standard of taste. Persons who have made severe inspection of the edifice, from the deep wine cellars through to the

roof, (where they could see a purple, dreamy haze hanging over the city!) pronounce it one of the most complete, in all its appointments, of any establishment in the Miami Valley. That its proprietor is a generous host his estimable wife, a refined and entertaining hostess, and his family among the most interesting and obliging in the land, the scores who visit "Floral Hill" will gladly testify—and none more cheerfully than the horticultural guests who were so agreeably entertained there on Wednesday.

Some idea may be had of the extent and importance of President Ohmer's grounds by a running inventory of the horticultural situation: At the left of the carriage avenue as you enter into the grounds, is a two-acre vineyard of extra grapes, put up on wire trellises, supported by staunch posts, the vines being firmly attached to the trellis, and growing very finely. To the right of the avenue, as you enter, is an orchard of four hundred and fifty pear trees, comprising the Bartlett, Doyenne d'Ete, Flemish Beauty, Louise Bonne, Swan's Orange, Tyler, Seckel, and other varieties. Still further on is a *petite* apple orchard, with three hundred and fifty thrifty Virginia Crab, King of Tompkins County, and Rome Beauty apple trees. Nearly on a line with the front of the mansion, the carriage avenue turns at right angle to the east, passing through an extensive grape arbor; then circling around the house, it runs due north, passing neat and numerous outbuildings, stables, barn, etc., and reaches away over to the neighborhood of the Xenia pike. On either side of this lengthy avenue, the fruit trees, now in bloom, and the shrubs and berries, just swelling to blossom, are so abundant and so thickly studded over the the grounds, as to seem to be illimitable. We will state, for instance, that on the central avenue are successive orchards, comprising, alternately, 400 quince trees, 800 pear, 600 cherry, 350 apple trees—then 600 more pear, 1,500 peach, and 500 apple trees; and all of the finest varieties of fruit—tested by actual production.

Many ladies were present in full force. The last year's annual horticultural exhibition was not pecuniarily successful, but the Society will try again this year.

R. W. Steele, Esq., made an effective address on horticultural manias, going from the tulip, the Morus multicaulis, and the "Wine plant," to the Grape, of which he said:

"The Grape mania is another which has not yet quite spent its force, although there is a perceptible diminution of the fever. For two or three years past, the columns of our horticultural magazines and papers have been crowded with glowing accounts of seedlings which were to eclipse and displace all the old standard kinds. Of the hundreds of seedlings which obtained a temporary notoriety, and sold for large prices, but few have proved of real value, while many are utterly worthless. Some of us know from real experience the annoyance of finding, after three or four years of patient waiting, worthless vines, purchased at high prices, and of great pretentions, cumbering the ground that might have been occupied with Delaware or Concord."

In this, however, he can scarcely mean to include the *Gardener's Monthly*, whose conservatism, rather than its enthusiasm on "every new thing," has been the rather blamed.

An interesting discussion on Blackberries and Raspberries ensued. Mr. J. H. W. Mumma said the *Hubbard* or "Local Red Antwerp" produced better than the Philadelphia. President Ohmer and others recommended highly the Philadelphia for that district. It grows there best on sandy soil. The Naomi, so far as tested, promised well. Several members remarked that the *promises* of many fruits, when discounted in advance, were very often not *paid at maturity*, and the Allen was named as one whose *notes were protested* for non-payment. Catawissa was highly praised for a full crop, and the resolution being brought up for a vote, the Miami Black cap and Local Red Antwerp (not Hudson River) were recommended, while the Doolittle was condemned by a full vote. On motion, the Purple Cane was recommended for amateur cultivation. When the Blackberry was brought up, many of the members complained that the Lawton was "tender."

Capt. Wambaugh said the Lawton succeeded the best in sandy soil, and they had never been winter killed for him. His canes were planted in rows, and were large and hardy, and yielded well. He didn't approve the plowing of Blackberries. The roots were cut, and the berries were deteriorated by suckers growing up. The weeds should be kept out by hoeing and mowing. They didn't need any cultivation, but should be mulched. The rows should be eight feet apart, and the plants about eighteen inches or two feet apart. If cultivated at all, it should be very shallow. The roots are easily cut, and shoots spring up. Spring planting is best—before the buds start.

J. H. W. Mumma had the Kittatinny berry, but they were not equal to the Lawton, as bearers. They were both hardy, however; and he thought there would be a come out in the Kittitinny's.

General Schenck was present at the meeting, and distributed among the members of agricultural bearings, some valuable seed from the Agricultural Bureau. Mr. Steele also presented the members with a variety of rare garden seed, which were gladly received.

THE COLLATION.

About 3 o'clock, P. M., the meeting adjourned to the mansion, where the hostess, assisted by her lady guests, provided a superb collation, and it is only necessary to say, in this connection, that it was met with the most severe justice, by the large company, who sat down at the "festive board." We will not attempt to describe the occasion, which was noticeable for its wit as well as for the excellence of the viands.

NEW MEMBERS.

The following members were added to the list: Mrs. M. S. Gunckel, Mrs. John Clingman, Messrs. B. N. Davis, John H. Scheffel, H. H. Tillottson, C. L. Janney, R. R. Dickey, John Wolf, John Howard, Talbott Chambers.

DOVER (DELAWARE) FRUIT GROWERS' ASSOCIATION.

The peach and berry crop is now the fruitful subject of discussion among a large class of the citizens of this portion of Delaware as well as parts of Queen Anne and Kent counties, Maryland. In view of the prospect of a large yield of peaches and berries this season, a special meeting of the Peninsular Fruit Growers' Association was held May 18th, in the State House at Dover. The trains which arrived at that place prior to 2 o'clock P. M., brought the owners of peach orchards from various sections of the State in large numbers, and also parties from New York, Philadelphia, and other cities interested in the canning and preserving of peaches.

A number of growers brought with them branches from their trees, loaded with the young fruit, and all showing that, unless some adverse circumstances should occur, the yield will be greater than ever before known in this State. Two years ago the shipments from Stations along the line of the Delaware Railroad reached about 1,500,000 baskets, and it is expected that the present season will yield about 2,000,000. This may be increased nearly 100,000 baskets if the Queen Anne and Kent Railroad is completed in time to bring the fruit from those two counties, and there is every prospect that this will be accomplished.

The best and most productive peach orchards are to be found in the section of country south from St. George's in New Castle county, in the upper part of Kent, and from the Sassafras river across to the Delaware river, between Delaware City and Port Penn, and extending along the river to near the mouth of Smyrna creek. The peach crop in the vicinity of Middletown, Delaware, was much damaged on Sunday last by a heavy hail storm which extended over a strip of country about two miles wide. The trees were badly cut, and the fruit knocked from the trees, but notwithstanding this fact, it is estimated that 150,000 baskets will be gathered in this neighborhood. This fact alone shows how flatteeing is the prospect to the grower, and also holds out the hope that prices will be low enough to allow all classes in our large cities to enjoy this healthy fruit.

The Delaware, Philadelphia, Wilmington and Baltimore, and the Camden and Amboy Railroad Companies are making extensive arrangements to convey the fruit to market. A large number of cars have been constructed, so ventilated as to prevent as far as possible loss by decay, while the fruit is in transit to Philadelphia or New York. The Camden and Amboy Company expect to have nearly 300 cars, and the Philadelphia road nearly 200, and run on the Delaware road about four trains a day.

The Association met at 2 o'clock P. M., Mr. John P. Cochran in the chair and Mr. J. A. Fulton acting as Secretary. Mr. Samuel Townsend, chairman of the committee on transportation, reported that the railroad companies were preparing their cars so that each car will carry 540 baskets, each basket containing 20 quarts.

The chairman stated that the Philadelphia and Wilmington Railroad Company would carry peaches from Dover to Jersey City at $130 a car, and at the same proportion for longer or shorter distances. Each car to carry 540 baskets, each basket weighing about 28 pounds. It was also stated that there would be a deduction of ten per cent. on the freight if the production should exceed 1,500,000 baskets, and the freight would be increased if the crop fell off. A long discussion ensued upon the subject of freight, the character

of commission merchants in New York, and other matters of peculiar interest to peach growers.

The following estimates were given as to the number of trees, and the number of baskets likely to be sent from each station. No. of trees one year old, 301,410; do. of trees two years old, 239,974; do. of trees three years old, 293,856; do. of trees four years old and over, 1 099,590, making a total of 1,974,830. The following estimates of the number of baskets of peaches to be sent from the various stations were made by members of the association growing peaches in several localities: St. George's, 10,000 baskets; Mt. Pleasant, 75,000 do.; Armstrong's Corner, 150,000 do.; Middletown, 175,000 do.; Townsend, 140,000 do.; Blackbird, 45,000 do.; Sassafras, 80,000 do.; Clayton and Smyrna, 150,000 do.; Brenford, 25,000 do.; Moorton, 150,000 do; Dover, 200,000 do.; Camden, 125,000 do; Willow Grove, 20,000 do.; Canterbury, 50,000 do; Felton,60,000 do.; Harrington, 10,000 do; Farmington, 20,000 do.; Greenwood, 35,000 do; Bridgeville, 20,000 do.; Seaford, 40,000 do.; Laurel, 5000 do.; Princess Anne, 10,000 do; Kingston, 2000 do.; Milford, 50,000 do.; Georgetown, 15,000 do No reports were received below Laurel, as the crops in that section of the country were stated to be failures, in consequence of a snow storm early in April. The total number of baskets estimated is 1,607,000.

The following is the estimate of the berries likely to be sent over the road:—Strawberries, 1,018,750 quarts; blackberries, 74,500 do.; raspberries, 21,000. This does not include the wild berries gathered in various parts of the State.

The freight on 1,500,000 baskets of peaches will amount to about $500,000, and this amount is realized in about six weeks. About 400,000 baskets will be sent by water to this city.—*Phila. Ledger.*

VIRGINIA HORTICULTURAL AND POMOLOGICAL SOCIETY.

Meeting of the Executive Committee.

A meeting of the Executive Committee of this Society was held at their rooms on the evening of the 15th of April last. A very encouraging report was received from the canvasser, and it was, thereupon, decided to offer a premium list amounting to eight hundred dollars.

The following Standing Committees were announced (the first named of each Committee being Chairman)·

Flowers—Dr. J. T. Johnson, Dr. Thomas H. Williams, Dr Richmond Lewis, Wm. G. Taylor, and Dr. C. W. P. Brock.

Vegetables—Joseph R. Rennie, L. Chamberlayne, Wm. L. Harrison, J. O. Austin, and J. W. Gordon.

Wines—Wm. H. Hexall, R L. Christian, J J. Werth, M. B. Buck, and Col Wm. Gilham.

Fruits—Franklin Davis, Chairman; the others to be announced.

Essays—Dr. S. P. Moore, Hon. R. M. T. Hunter, Gen B. T. Johnson, Hon. B Johnson Barbour, and Professor Mallet.

Statistics—Prof Wm. Allan, Jacob Fuller, Jed Hotchkiss. Rev. L Rosser, and J. T. Griffin.

Horticultural Implements—I. S. Tower, E. B. Addison, John Asher, A. P. Routt, and John T Early.

Arrangements—Capt. C. H. Dimmock, T. A. Brander, John Poe, Jr., and M. T. Clarke.

In consequence of the illness of S. P. Moore, Chairman of the Committee on Premiums, the list was not acted on, but was deferred to a future meeting.

On motion of Dr. Johnson, a committee of six was appointed to make the necessary arrangements for a strawberry and flower exhibition during the season.

The President appointed the following committee: Dr. J. T. Johnson. Franklin Davis, J. E. Stansbury, John Morton, Rev. Leonidas Rosser, and Col. J. J. Werth

KENNEBEC HORTICULTURAL SOCIETY.

The officers of this new Society, incorporated by the last Legislature, have decided to hold an exhibition the coming autumn, and met in this city last week to perfect a list of premiums. They have entered upon the work before them with zeal, and we have no doubt their Fair will be a success. We have material enough in the county to make such a society and such an exhibition as it will hold financially and practically successful, and in the hands of the present competent board of officers, we feel sure it will be done. It is designed to hold the exhibitions alternately in the cities of Augusta, Hallowell, and Gardiner. The premium list for the first exhibition will amount to something like five or six hundred dollars. Hon. Jas. W. North of this city is President of the Society, and David Cargill, Esq., of East Winthrop, Secretary.—*Maine Farmer.*

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HINTS FOR JULY.

FLOWER GARDEN AND PLEASURE GROUND.

We have so often spoken of hedge management in these *hints*, that it seems to us as if every one ought to know about it; but it is wonderful how few do. Only recently one whom we know to be one of our most attentive readers, and to have been one from the beginning, remarked as he passed, what everybody calls a very beautiful Norway Spruce hedge on our grounds, that it was really beautiful, but it was a great error to have it so unnecessarily wide at the base. This hedge is five feet high and five feet wide at the base, which makes it rather wider than it is high; of course it is trimmed in to a truncate triangular form.

Now it is one of the essentials of a permanent prosperous hedge, that it must be at least as wide at the base as it is high, and that it must be trimmed with a flat or gently curved surface to a point at the top. The *light then has a chance to play directly on every part of the leaf surface*, without which, it is impossible to have a hedge long in order. For that part which receives the greater share of sunlight, will get stronger, and that which gets the least gradually grows weaker, till a thin, poor base is the final result. This is one great object in pruning to remedy.

Another strong point to be gained is to weaken the strong upward tendency which, every one knows, is the *weakness* of hedge growing. Nothing weakens a plant more than to have its leaves taken off while young, just after they push, and before they are fully mature. If, therefore, the shoots towards the top of the hedge are taken off about the first week in June, while they are yet soft, that part of the hedge will be weakened, and the base, which for some months we leave uncut, will be correspondingly benefited thereby.

The same principles of pruning can be kept in view in the treatment of shrubbery where low, bushy-headed plants are required.

Keep the pruning knife busy through the trees and shrubs, with the object of securing good form. Judgment will soon teach one which shoots would spoil the shape, if not taken out.

The lawns, walks, and flower beds will still require constant care, and attention can be bestowed at this season on improving the form of trees and shrubs. In some parts of a large garden, trees are in better keeping with surrounding scenery when suffered to grow wild and pretty much to themselves; but near buildings, or in any part of a garden which is to denote high keeping, symmetry will ever be considered a chief element in beauty, and the aim be, what after all is the true object of gardening, an improvement in fact over the prettiest natural scenes. Trees and shrubs can be made as regular as we wish, by traing a shoot here, and tying one there—now using a stake, and at another time employing a string. After a few weeks they will grow as you have placed them, and exemplify the adage, that "as the twig is bent the tree's inclined" The most malformed or ugliest specimen of an evergreen may be made an exquisite "thing of beauty" by such trifling care.

Plants set against walls and piazzas frequently suffer from want of water at this season, when even ground near them is quite wet. Draw away the soil around each each plant so as to form a basin; fill in with a bucketful of water, allowing it time to soak gradually away, and when the surface has dried a little, draw in loosely the soil over it, and it will do without water for some weeks. This applies to all plants wanting water

through the season. If water is merely poured on the surface, it is made more compact by the weight of water, and the harder the soil becomes the easier it dries; and the result is, the more water you give the more is wanted.

The time is coming when transplanted trees of the past fall and spring will suffer more than during any other part of the season. If they show a vigorous growth of young wood, no danger need be apprehended, as it indicates that the roots are active, and can supply all the moisture the foliage calls for; but if no growth has been made, no roots have been formed, and the leaves are living for the most part on the sap in the wood and bark; and hot, drying weather will tell with injurious effect on such trees. This is generally first shown by the peeling off of the bark on the southwestern side of the tree,—the most drying aspect; and where such exhaustion appears probable, much relief may be afforded by cutting back some of the branches, syringing with water occasionally, shading the trees where practicable, or wrapping the trunk in haybands or shading the southwest with boughs or boards.

Amateurs may have some rare or choice shrub they may desire to increase. They may now be propagated by layers. This is done by taking a strong and vigorous shoot of the present season's growth, slitting the shoot a few inches from its base, and burying it a few inches under the soil, or into a pot of soil provided for the purpose. Any thing can be propagated by layers; and it is an excellent mode of raising rare things that can be but with difficulty increased by any other.

Hollyhocks will be coming into bloom at this season. They have now become so much improved as to be one of the most popular flowers for the summer decoration of the flower garden. If the kinds are kept carefully separate, any particular variety will reproduce itself from seed. They may be more certainly kept pure by cutting of the flower stem; each bud will make a plant. The seed should be sown as soon as ripe in a light, rich soil, in the open air. If retained till late in the season, they will not probably flower until the next year.

The Chrysanthemums should be examined, and if the shoots thrown up are thickly together, some of them should be rooted out. If the flower-shoots are layered into four or six inch pots, they make very pretty dwarf plants, that are well adapted to neatly ornament a room or small conservatory, where larger plants would be objectionable.

The next two months will be the trying time with such plants as Auriculas, Cinerarias, Calceolarias, and others which cannot endure the dry atmosphere of our summers. We keep our Auriculas all the year round under glass, with the best results. They would do as well under any light enclosure that would prevent the too rapid escape of moisture. A sunk pit would be an admirable contrivance for them, besides making a good place to store away half hardy plants through the winter.

In most kinds of soil the keeping the surface loose by hoeing and raking in dry weather, will be an excellent method of keeping the main body cool and moist,—admitting the air, which is a good non-conductor In soils, however, which are deficient in loam, and in which sand prevails to a great extent, frequent stirrings have a drying tendency, and a mulching of short grass, or decaying vegetable matter of any kind will be found very useful around transplanted trees, shrubs and other things.

The Gladiolus has become one of our most popular summer flowers. Those who have collections of them arrange the varieties very tastefully according to their colors. Take a list of colors as they flower, so as to arrange them properly next year. We give the same advice for Petunias, Verbenas, and Geraniums. The various shades of colors of these varieties properly arranged, make beds peculiarly pleasing. This is one of the arts of modern flower-gardening, to arrange flowers properly according to shades of color.

FRUIT GARDEN.

Those who have orchards or fruit trees in grass must remember that around about the trees it must be *kept short*. The grass itself is of no especial benefit to the tree, except so far as its decaying roots may furnish a manure, and in so far as it affords a cool medium for the encouragement of fine fibrous roots near the surface. The very hot soil which the usual clean surface favors is unfavorable to American fruit trees,—and the grass makes a favorable, cool, permanent shade,—but if this grass is suffered to grow long, *the roots run deep*, and they draw out too much moisture, doing as much harm by the extra dryness as they do good by the shade. Another point in good orchard management is to go over them at this season, and pull out any strong shoots that may spring out through the center of the trees. If these remain, they eventually absorb all the best sap to themselves, and by so much weaken the outside fruit bearing branches. Every farmer knows this, and every four or five years goes through with saw and hatchet, cutting them out in winter. But such severe pruning all at once is a heavy blow to the vitality of the tree. It is best to go over the trees every year, and at this season stripping out while young all those sprouts that may not be permanently required.

Where new Strawberry beds are required to be made that will bear well the next season, the very first runners of the season should be selected, and layered into small pots, or what is much better, the Ryder plant boxes, recently noticed in the *Monthly*. In about three weeks they should be cut from the parent stem, and left to a separate and independent existence for a few days. After preparing the ground properly for their reception, the pots should be well watered and the plants turned out into spots designed for them. They will then grow finely the present season, and bear surprising crops of fine fruit the next spring.

A warm sandy loam is the best for a Strawberry bed. A low and damp one is of all the most objectionable. Though warm and dry in one sense, it should be rendered capable of retaining moisture in the dryest weather, and this can only be perfectly accomplished by draining and subsoiling. If the latter is done three feet deep, all the better.

Unless in a very sandy soil, a very heavy dressing of stable manure is objectionable. Wood ashes, ground bones, and matters of a mineral nature are far more advantageous.

Strawberries for forcing are treated in pots, as we have already described; but instead of being transferred to the open ground, when well rooted in the small pots, are repotted into five or six inch pots, and these latter plunged in the ground to their rims in a spot the most favorable to Strawberry growth.

After having grown well, and when they show signs of having formed a good strong crown, they are to be taken out of the open ground and gradually ripened by withholding water,—taking care that it is not done so suddenly as to make the plants wither, or they will suffer much. Towards winter they can be set in a cold frame and covered with dry leaves for a slight protection from the frost till wanted. Many commence to force at the beginning of the new year, when they are brought into the greenhouse and must be set near the glass. A high temperature is fatal. 45° to 50° is sufficient for a few weeks, and 55° to 60° when the fruit is fairly set. They love to be frequently syringed, and guarded against Red-spider, which is their greatest pest. Where there is not the convenience of a greenhouse to force Strawberries, they may be had a few weeks earlier than usual by making a piece of ground slope to the southeast, planting out as already described for garden culture, and then setting a glass frame over them. The nearer the frame and glass can be brought to the soil, the better and earlier will the crop be. Protecting from frost in Winter also adds to the earliness of the crop. The earliest variety to be had in the locality should be employed.

It is very remarkable that after so much in this way has been done by a few cultivators, more do not practice this cold frame forcing.

Mr. D. W. Herstine has done a great deal in this vicinity, by exhibiting his beautiful cold frame fruit, so often before the Pennsylvania Horticultural Society.

VEGETABLE GARDEN.

In many amateur's gardens late Peas are valued. It is essential that they be planted in the coolest part of the ground. The Pea is a cool country plant, and when it has to grow in warm weather, it mildews. The Marrowfat class are usually employed for late crops. They need support. All Peas grow better and produce more, when grown to stakes. Bush Beans may be also sown for late crops. A very deep rich soil is necessary to tender crisp pods. The Lima Bean will now be growing rapidly. It is time well spent to tie them to the poles as they grow. The poles should not be too high, about eight feet is enough. They commence to bear freely only when the top of the pole is reached.

The Lettuce is another cool country plant. It can only be grown well in hot weather when in very rich and cool soil. For winter use Beets are occasionally sown now, and also Cucumbers for pickling purposes; but not often; and at any rate it must be attended to early in the month. Tomatoes trained to stakes give the sweetest fruit, and remain in bearing the longest; but many cultivators who grow for size and quantity only, believe they have the best results when growing them on the level ground. Celery is the chief crop requiring attention. The great point is to get short thick growing varieties, as

the long kinds require so much more labor to blanch. The Boston market variety is therefore popular, and is really very crisp and nutty flavored variety. After so many trials with different ways of growing them, those who have their own gardens; amateurs, for whom we write, find that the old plan of sinking the plants in shallow pits is about the best. Trenches are dug about six inches deep, and three or four inches of manure then dug in, of which cow manure is the best. They can be watered better this way in dry weather, when in these trenches, and it is so much easier to fill the earth about them for blanching purposes than when grown on the level surface. Salt in moderate doses is usually a wonderful special fertilizer for the Celery plant.

Late Cabbage is often planted in gardens between rows of potatoes, where it is an object to save space. Some fancy that that the Cabbage is better preserved in this way from the Cabbage fly, which they say prefers the potato; but on this point we are not sure. We do not think the Cabbage do quite as well as when they have the whole ground to themselves; but of course a double crop could not be expected to be quite so fine.

COMMUNICATIONS.

EULOGY OF JOSHUA LONGSTRETH.

BY THOMAS MCCUEN, M. D.

Read before Penna. Horticultural Society, May 1st, 1869.

At the beginning of the present year (1869), there remained eight only of the seventy-nine members whose names are recorded on the foundation of this Society, December 21st, 1827. We are now called to deplore the loss of one of these, whose love of floriculture and the kindred arts was remarkable, even at a much earlier period.

There can be few persons inspired with the love of nature, and whose recollections go back to the first twelve years of the century, who do not find among the most vivid, those of visits to the greenhouse of Joshua Longstreth; and who will not associate with the display of a rare plant or an attractive flower, the cordial reception and the genial smile with which they were met by the host.

Among the flowers seen there by many no doubt for the first time, the Cereus grandiflorus, by its size, beauty, and color, not less than the mysterious hour of its expanding and closing, was among the more remarkable.

The greenhouse above alluded to, was an appurtenance of the houses numbered 513 and 515 Arch street, which Mr. L. built in 1809, when his success in business enabled him to indulge his favorite taste; it long continued to be a source of enjoyment to him, and has existed (though lately not used) till the present year, when a new disposition of the property requires its removal.

After residing eighteen years in the house in Arch street, Mr. Longstreth left it to live in the country, but continued to spend his mornings in the city. For his convenience at these times, a room adjoining the greenhouse was fitted up as an office, a window of which was so contrived that even in his hours of occupation he had before his eyes the objects of his predilection.

In the country his first employment was an early stroll in the garden, where he collected the opening flowers, to give them, in the course of the day, to the persons he met in the ordinary intercourse of life. As the recipients of such favors, he selected those to whom flowers were a rare enjoyment; for invited guests the floral decorations received his careful preparation.

Mr. Longstreth was not unfreqently heard to say that he did not wish to outlive his fondness for flowers. It did not abandon him but during two severe attacks of sickness; its return was a concomitant of his recovery.

Between the years 1825 and 1830 Mr. Longstreth occupied two country-seats he had purchased, in succession—the latter was Pennbrook (now the German Hospital). In the latter year he became possessor of the adjoining place, Barclay Hall, where he spent, with little exception, the remainder of his long life.

In 1835-'36 he made a journey to Europe, in company with his friend, Mr. Caleb Cope. They were absent about eighteen months—visited England and France; and, as may be supposed, Mr Longstreth lost no opportunity of inspecting the flower gardens of those countries.

Barclay Hall possessed many advantages of position; a comparison with the seats Mr L. had left, evince his taste and judgment, as his removal at his then rather advanced years, proves the energy of his character. Most men, at that time of life, would shrink from such an effort.

Some of the advantages of the situation were that a superior residence on either side kept out of view what was unattractive. A wood of about twenty acres in extent, consisting of a great variety of forest trees of vigorous growth, afforded shelter from the northeast winds, and added highly to the embellishment of the landscape.

The mansion stood on grouud somewhat lower than the points of entrance to the estate; yet the distance was considerable, and the avenue at first descended rapidly to a brook, from which the subsequent rise was sufficient to prevent the unfavorable effect such a difference in levels would otherwise have produced.

Mr. L. made some additions, chiefly for the accommodation of his beloved plants. They were a greenhouse and a hothouse, each of about 130 feet in extent, with two smaller glass houses. These were systematically disposed, as far as the older edifices allowed—comfort and convenience were, however, the prevailing features throughout all his arrangements. Many plants were collected here, which then uncommon, attracted numerous visitors, and generally formed no small part of the interest in the exhibition of the society at the periods of their splendor, soon we hope to be renewed in our spacious Hall.

An enumeration of these plants would be now of little interest; the two climbing roses, Triomphe de Luxembourg, and a yellow tea, however, still flourish, festooning the vestibule of the greenhouse. The Giant Cereus Peruviana of which the height is only limited by the glass that covers it, never fails to excite wonder. We must all hope that on the dispersion of these objects now soon to take place, with a suitable abode it may again find the congenial treatment that has enabled it to endure ninety five years under an adverse sky. Within a few years Mr. L. has mentioned it was exactly of his own age.

The scene thus faintly sketched, is now already disappearing; these natural beauties and their judicious appropriation to the elegancies of life will hardly survive him who so long enjoyed them, and delighted in showing that enjoyment with his friends. The pure waters and neatly kept banks of the brook, are invaded by foul streams from neighboring factories creeping in a noisome gully. Brick yards deface the surface of the ground,and the smoke of brick kilns blackens the air. The noble trees of the adjacent grove are falling before the axe; in a few months not one will remain standing. At a period probably not much more remote, Barclay Hall will disappear before an advancing street. For a year or two to come, what of this region lately so beautiful, is not covered with rows of brick houses, will most probably be a forbidding common.

Joshua Longstreth, whose name will ever be memorable in connection with this beautiful seat, was the third son of Joseph Longstreth and Susan Morris Longstreth. He was born on the 20th of June, 1775.

His grandfather, Bartholomew Longstreth, emigrated from the town of Settle, Yorkshire, England, in 1698, and purchased a large tract of land of the Penn family, in Bucks Co., Penna., where he married Anne Dawson. Joshua received a plain English education, and removed to Philadelphia at an early age, where he engaged in the dry goods business with his cousin Susannah Longstreth on Third street.

He was in partnership at one time with Edward Wilson, father of the gentleman to whom the collection of objects of Natural Science and libraries on that branch of knowledge are indebted for the most liberal contributions.

In 1800 Mr. Longstreth married Sarah, daughter of Jesse Williams. His business was extended to important mercantile operations, and so successful that, after a few years, he was able, as already mentioned, to follow the bent of his inclination in his mode of living; the culture of flowering plants, giving the direction to many of his plans.

Mr. Longstreth continued in the religious tendencies of all his ancestors, always maintaining their connection with the Society of Friends. He was entirely unostentatious in his charities; those who knew him best, believe that his contributions to the benevolent movements of the day, were a liberal portion of his means. He was 19 years old at the time of the second election of Gen Washington to the Presidency, was thus naturally brought up in the political principles of the sage and patriot. He watched with deep interest the progress of national events, and the course of affairs in his native city. It was a cheering reflection to him in his last days that he had been able to cast his vote for the present honored chief Magistrate, and that from the beginning of the century when his age qualified

him for that duty, he had never failed to vote at a presidential election.

In other concerns of life, his persistence was not less remarkable; he was for fifty years a Director of the Philadelphia Contributionship for the Insurance of houses from loss by fire; a Director of the Philadelphia Bank, from its beginning till 1862.

As these traits indicate, his local attachments were strong; love of kindred formed a prominent feature in his character; his relation from the nearest to the most remote, shared his affectionate regard. He outlived his children, three daughters and the husbands of two of these ladies; the loss was in a measure assuaged by the filial care of several grandchildren. Thus the devoted attention of two generations of descendants, joined to his equable temper, spared him many of the sorrows of age. He retained his clearness of mind almost to the last, and much bodily strength till within a few weeks of his death, which occurred at Barclay Hall, January 27th, 1869, in the 94th year of his age.

THE AGRICULTURAL DEPARTMENT AT WASHINGTON.

BY J. B., WASHINGTON, D. C.

I enclose you an account of some matters which are being done by the agricultural department, which I think will have some interest for the readers of the *Gardener's Monthly*. As an additional item, I may remark that the Smithsonian Institution has turned over to the department a great number of specimens of plants, and that Mr. Capron has employed Dr. Parry to arrange and lay the foundation of this national herbarium. Dr. P. has already spent two months on his task, which will give you some idea of the size of this little "nucleus." From all I can learn, Mr. Capron is endeavoring to make the department a credit to the agriculture of the country, and although many things perhaps have not been done that many might think ought or could have been done, most of those who know his difficulties think he has done all he or any else could. If you think any of these facts worth publishing, you are welcome to use them. I think it would be worth your while to pay us a visit; I never heard of your being here:

Few who have had occasion to visit this beautiful area, south of the canal and between Twelfth and Fourteenth streets, cannot but have noticed the activity displayed in the work of planting trees, transplanting of rare flowers, and various other operations tending to beautify and adorn the reservation allotted to the Department. Commissioner Capron is a close student, a progressive man, and thorough botanist; and will, if supported by the co-operation of Congress in meeting his estimates and appropriating therefor, make these grounds equal, if not superior, to similar gardens now receiving so much attention in other countries.

THE FLOWER GARDEN.

Immediately in front of the building a flower garden of architectural beauty is formed. This is in perfect keeping with the surroundings, and, when a stone wall is substituted for the present sodded terrace, with balustrades and vases and other decorative accompaniments on the pediments, will present a fine appearance, and afford an example of harmonious arrangement such as is only met with in the higher branches of design.

THE ARBORETUM.

One of the greatest features, however, will be the arboretum or collection of trees. This will embrace a single specimen of every tree and shrub that will exist in this climate, and in their disposal a twofold arrangement has been kept in view, that of a strictly botanical classification of families, species, and varieties, and the production of a high degree of landscape gardening. This has necessarily involved a vast amount of time and study. The botany of all nations had to be ransacked in order to call out every suitable plant and tree. The *fasciculi* for this arrangement covers over 200 pages of closely written foolscap. As a collection of hardy plants it will be unequaled by anything in existence at the present time. To combine a strictly scientific arrangement with artistic effect required no ordinary amount of skill and foresight; years, however, will be required before the ultimate effects will be fully produced so far as the development of individual forms and combinations of growth are concerned.

THE PROGRESS OE PLANTING.

Much has already been accomplished in the planting of trees and shrubbery. With the completion of the planting of the present season about three-fourths of the entire collection will be set out. Many of the plants, especially those of our Western States and Territories, will be difficult to procure, not being in cultivation as yet; they are not to be found in ordinary nurseries. Some of the family groups are already

completed—the elms, for instance, number over fifty specimens, all distinct. Of ashes there are forty, of willows over one hundred, oaks seventy, maple about fifty, and others are equally well represented. The pines and other evergreen species are now being planted.

ADVANTAGES OF THIS COLLECTION.

The possession of this collection will enable the department to answer many important questions with reference to the value of trees for wood, rapidity of growth, &c., (a point of great importance in the treeless tracts in the West,) and the most suitable plants for live fences and other subjects of equal prominence.

To the artist it will be of great attraction. The various forms of growth, the individual peculiarities of foliage and combinations of forms will afford a delightful study, and the mere visitor will be arrested by forms and beauties of foliage such as can rarely be found available; and the student in botany cannot possibly find a source of elementary knowledge at all comparable with that of being brought directly face to face with the living plant.

OTHER PROJECTS CONTEMPLATED.

Valuable and complete as this collection of plants will be, it is only a link in the chain of improvements contemplated by Commissioner Capron. Convinced that this country possesses localities and climates fitted for the growth of plants from other quarters of the globe, he is now having prepared a list of all plants whose products are used in medicine. When these are procured and their habits and requirements studied, they will be propagated and sent to such points as may be considered more suitable for their growth. The same strictly botanical classification as prevails in the Arboretum will be followed in the arrangement and disposition of these, so that scientific visitors of all nations will meet an arrangement which they can recognize. This feature of introducing systematic classification in collections of plants brought together for purely utilitarian purposes is of great moment, and must impart a degree of interest and value not generally attached to plants in our green houses and pleasure grounds.

OTHER PLANTS.

A similarly arranged collection of all plants employed and grown for the value of their textile qualities, for dyes, and for all purposes of arts and manufactures will be completed as rapidly as means will admit. Of course to cultivate and extend exotic plants glass structure will be required. A beautiful architectural design for a series of hot-houses and green-houses has been made under the direction of the commissioner, which now hangs in his office, and is universally admired.

APPROPRIATIONS.

The small appropriation asked for the completion of this plan not having been entertained by Congress, no progress has been made in the erection of these structures.

ECONOMY STUDIED.

One of the greatest points in connection with all these improvements is the economical manner in which everything is being managed, together with the thoroughly substantial character of the work. Estimates of every item are preconsidered and the work done *within them*—no leaving of half-finished jobs because of under-estimating the cost. The result is that an apparent finish is constantly met with, and in reality exists in the various progressive details of contemplated finished design.

EXTENT OF GROUNDS.

The extent of grounds occupied by the Arboretum proper embraces about twenty acres. This is considered sufficient to allow of free development for the trees and plants for thirty or forty years growth. It is hoped, however, that an additional space will be secured within the next ten years to allow of the removal of certain entire orders of families of the trees, which can be done without injury to the plants or to the system adopted, and at trifling cost. This addition, it is to be hoped, will be granted, as there is abundance of unimproved Government property contiguous awaiting this combination of landscape gardening and botanical skill.

These are but a small enumeration of the many projects entertained by the Commissioner for the improvement of the grounds of his department. For the system and radical changes already introduced the Commissioner deserves the thanks of the whole country.

THE GARDENER IN CHARGE.

Mr. William Saunders has had the general superintendence of all improvements thus far effected. Mr. S. has given this class of business his life-study, and seems to be thoroughly posted, both in the requirements of a first class garden and the manner in which it should be managed.

[We have taken the privilege accorded us of publishing "any part" of this private letter, to

give the whole, as there is nothing in it not of interest to the public eye; especially as our correspondent is not concerned with any of the public departments at Washington, and has no interest in "puffing" anything about which he writes.

We are very much pleased at the activity of the agricultural department. We have always kept clear of Washington, having no taste for party politics, and political intrigue, of which this city always seemed to us to be wholly built; but if there is to be so much real interest to the horticulturist, we may possibly take it into our circle of travel one these days.—Ed]

"YE SHALL BE AS A GARDEN THAT HATH NO WATER."

BY WALTER ELDER, PHILADELPHIA.

The prophet Isaiah, was well skilled in various branches of husbandry, and knew the essentials requisite for the successful culture of the different departments In predicting the unfortunate fate of his beloved land, Judea, he could not portray her future ruin with greater serenity, than by the words of our heading; which he addressed to her, "Ye shall be as a garden that hath no water." What a desolate looking spot a garden would be without water! Verdure would disappear, and beauty would turn into deformity. The health of the people would fail them for want of wholesome vegetables, and a nation would become a ruin. Science and art were less understood in the days of Isaiah, than in our time. By Hydrology and the process of plumbing, we can now make water come into our gardens from great distances, and deep hollows at our biddings, so our gardens need not lack water.

This leads us to enquire, what kind of waters are most beneficial for growing crops? When and how should they be applied? The waters from rains and snow are the best. They get softened by passing through space; and in their fall they bring down fertilizing matters which ascend from the earth, and are held in suspense by being lighter than the atmosphere. No artificial waterings give such immediate vitality to fading crops by great draughts as the rains do. Much of the rain that falls upon buildings may be carried into cisterns in our gardens, to be used when needed. We know of several large establishments where such is the case; and also surplus waters of land, and waste waters from households, are carried into gardens by under drains, and held in cisterns for use: and so it should be from barnyards. Waters from running streams are next best, as they are composed of various matters from springs. Washings of lands gain by the way, and are softened by travel, They, as well as the rain are of the same temperature as the atmosphere. The waste waters of many kinds of manufacturing establishments are very fertilizing: Currier shops, Morocco dressers, Tanneries, Slaughter houses, Distilleries, Breweries, &c·, are very fertilizing. Water from deep wells is poor of itself, as it is too cold in the growing season, but when put into large tanks, and exposed at least twenty-four hours to the light and air, they get softened and warmed; and by mixing guano, poudrette, and other fertilizing matters with them, their value is made thereby ten times greater.

What times are best to apply any of these waters? Any time when the crops are in need of them; and given in the evenings during summer. To plants in glass houses, or other forcing arrangements, in cool weather, give water in the forenoons. Syringing plants over head is of great benefit Nature teaches us that, by watering the soil by showers, to wash and refreshen the foliage, as well as moisten the ground for the roots.

Plants can only take nourishment from the soil when it is moistened with water. Many cultivators, from necessity, use well water; and some persons contend that it is as good as any, even if cold; but good sense and sound philosophy condemn such notions.

Trees, shrubbery, and many other transplanted plants are most in need of artificial waterings in dry weather, they having no dipping roots to sustain them during severe droughts, are wholly dependent upon their fibres for sustenance: and the fibres being all within a foot of the surface, artificial waterings are essentially necessary, and they should, if possible, be applied in the evenings, and the foliage syringed. A mulch, over the roots of trees, shrubbery, etc., is valuable in retarding evaporation of moisture from the soil, and waters are longer retained about the fibres. Coarse leaf mould, decayed tan-bark and sawdust, are best for mulching woody plants; but if these are not to be obtained, straw, manure, etc., can be used. Culinary vegetable crops need frequent watering, such as lately transplanted cabbage, lettuce, etc., the water has to be poured at the roots; but celery being set in shallow furrows, the waters can be more expeditiously applied, and it does more good. If shallow drills were made for all transplanted crops, artificial as well as natural, waterings would be more beneficial, if, when planting, a man with a hose could walk along a row with ease and water both leaves and roots, and by saving labor would double the value of crops.

SHADE PLANTS IN THE SUN.

BY B., BORDENTOWN, N. J.

I am sure, I may thank you in the name of many readers of the *Monthly* for your highly instructive article on the Red Maple, in a recent number of the *Gardener's Monthly*. It puts me in the mind to say a word or two on the subject of plants growing in the shade, that I have long wanted to say, but saw no encouragement to do so before. For however we may feel we are right in our own ideas, it is not so pleasant to be thought a fool by others.

Now I have sometimes visited some of my friends who have small woods about their houses, and it is quite likely that I hear them say "here you see is a shady spot I have selected for Rhododendrons—just the place for them. They like shade, you know." But I am sure they do very much better in the sun, although I have to admit they do grow naturally under the shade of trees.

I do not care to go into a discussion of whether we should imitate Nature or not. I suppose in a matter of mere school logic it might be very interesting; but I do know from my experience with greenhouse Azaleas, that a somewhat sunny place is in a long thing the best place for them. I repot just as they go out of flower, and set them out at once in a place where they get the full sun from ten o'clock to sunset until October; and no flowers can be larger, finer or more abundant than they. The plants are plunged up to their rims in the soil, and care taken that they do not dry up. I once used to keep them for the summer under the shade of a large maple tree, but they did not bloom half so well, nor were the roots so healthy-looking and nice as they are now.

I have reasoned on this; and thought that we do wrong with many of our wood plants, such as Rhododendrons and many shrubs, in putting them in similar places to which they grow. I have seen Rhododendrons in England, transplanted from America, put in the full sun, and nothing can be finer. True, it is not quite as hot as it is here, but yet hot enough at times to injure such things if they were the truly shade-loving plants they are supposed to be.

I thought to say chiefly that no doubt the reason that they are found wild in the shade of woods, is for the same one you give for the Maple in the swamps, that the seeds will not sprout anywhere else, and of course the plant has to stay where its seeds first start it.

The seeds of Rhododendrons and Azaleas are as fine as powder, and of course could not sprout anywhere, except in very cool and moist shady places.

It is surely true, whether this said sprouting business is true or not, that what I have seen of Rhododendrons, Azaleas, and others in full sunny spots is very satisfactory; much more so than when the plants grow in their native wild places; and I think cultivators will find it so also if they examine it carefully as I have done. Not only in these plants, but in other shrubs which I have taken out of the woods and put in the full sun, I have seen the great advantage. Some swamp magnolias which I have, are certainly very much improved in their open sunny spots over the shaded swamps in which they are usually found.

ADVICE GRATIS.

BY A NEW YORK "NURSERYMAN."

Some months ago you had a few words in the answers to correspondents, about people applying to you for gardeners, and finished up by saying why do not some persons establish a horticultural agency. I hoped to see the subject discussed further, for to me it is one of the most interesting broached for sometime. I have no remedy to offer for what I consider one of the greatest plagues of nursery life; but rather than see the subject die out, let me at least "throw on a little more fuel to the flame," as the poets say.

It is said that nothing costs us so much as that which we get for nothing, and every body knows that this is true. I also know to my sorrow that in my business, nothing has ever cost me so much as advice I give for nothing, whether in the recommendation of gardeners, or in the management of things bought of me. I have in fact often threatened to place on my business cards, "No gardeners recommended," "No advice given." I have had many excellent regular customers until some unlucky star induced them to apply to me for a gardener, when in the great majority of cases I have immediately lost

the trade. There are many reasons for this. In some cases your friend feels under some obligation, and if things are not exactly suited to his mind, says to himself, "I do not like this —— Messrs. —— have sent me, but they have been kind enough to get me a gardener, and I don't like to complain." If he had complained, the firm would probably have thanked him. They could have set the whole thing right. But smothered dissatisfaction never dies. The next order he gives to some other, where he feels free to object if he wishes.

Another case: Gardeners have often their own notions about what are their rights. They are frequently under the impression that besides the pay from their employers, they are entitled to commissions from the nurserymen who supply the trees and plants. There are some nurserymen who rather than miss sales will do this, and there are others who will not. It matters not for my present argument whether I am one of this class or not. If the gardener I send is one of the commission class,—and as we have not the power of reading hearts, we do not know how this is—he hates to ask for it, or take it from one who has got him the good situation, so he contrives to go elsewhere. Or, if he is one of these honorable men who, when he undertakes for a named salary to serve his superior faithfully, he feels that it "looks" rather like gratitude to the nurseryman who has done him a service to do much for him in the way of custom. If the employer should object to anything, he dare not correct the misunderstanding—it looks like favor. Any way the nurseryman suffers. At least this has been my case. I know I have lost scores of good customers, and many of them from just such feelings as these.

Again in the matter of advice. I scarcely get a hundred orders, in which half of them are not applications for advice as well. We do our best to accommodate. Those who get advice gratis never follow it. They think they do. If they paid for it, they would recollect the details of the advice better. But here is the rub. Next year you get something like this: "The plants I got from you last died. As I followed your advice closely, it is clear something was the matter with them before they reached me, and we have no doubt you will replace them." A striking case of the loss by "advice" occurred this season. We received an order for some trees and a postscript for advice, which, at the expense of half an hour's time, we gave. A few days after we got a reply—"I am obliged for the information about the plants. It so happens that we have no conveniences to treat them as recommended, and as therefore they are no use to me, I have sent them back to you, paying the return freight," which was so far kind enough. but as our nursery is six miles from a railway station, to which we have to deliver our stock by our own wagons, and we had no immediate occasion to send for anything there, the box of plants remains there to this day; the whole thing a bad debt. Of course, we shall be told we could "sue it out;" but we prefer to let it alone.

Now what are we to do? We continue to recommend gardeners, and to give advice when asked, yet we feel that it is all wrong,—a great injustice to ourselves. I have advised the other members of our firm not to do it, but we cannot agree to abandon it. B—— says, "let us do right, anyhow. Help our friends when we can, even though we suffer, for I have found that those who do wrong, or act selfishly, suffer in the long run, at least as much as those who are actuated by generous impulses."

Perhaps he is right. At any rate I shall hail the day when advice gratis, and getting of gardeners, are not considered amongst the duties of nurserymen.

Another thought. Perhaps you might think we wish you to think us amongst the self righteous. I don't therefore enclose my name. I know it is customary with newspaper Editors to expect this. If you conclude to publish it, therefore, without this rule being complied with, I shall be glad. It seems to me a case where the matter might be allowed to stand on its own merits.

PURSH'S JOURNAL.

(*Continued.*)

11. Returned to the Hollow. Being sick & tired of this place, I expected to find letters for me which would put me in a way to leave it; but was disappointed.

12. Having been informed about the tower of Pompey having the highest land in this nighborhood I concluded to visit it, as I had nothing else to do; accordingly I set out, & arrived there about noon: the rise which the road makes, after leaving the main turnpike is indeed astonishing before reaching the highest part of it, I had a view of Onondaga & Onćida lake; the whole of the hill is under cultivation, consequently no very well answering my persuits. When I arrived at the town every thing was in a bustle about the militia parade, for to draft the number required, towards the N. Y. militia as required by proclamation—I spent the afternoon in looking at their proceedings: nothing new this day. A Sonchus common almost every where grew here to the astonishing hight of 10. feet & more. The ground generally is exceeding rich & the timber to the highest top of the hill is beach & maple.—Very handsome formed trees of Cratægus Crus-galli, I observed very frequent.—Urtica procera—Helianthus squarrosus—Rudbeckia laciniata—Circaea alpina, &c.

Augt. 13. Having been informed about a very high fall of water at Pratts Mills, I went to see it; it is about 3 m. from the place I stood at over night, I crossed several high lands, interrupted by valleys & came to the little stream which forms those falls: when I came to it, I could not perceive where it could have so powerfull a fall, as it was told me, as the ground seemed to go very gently downwards as far as the eye could reach, & bordered at the East & West or rather hemd in by a ridge, over which it could not run, & through which there was no opening to go through; but when I came to the mill I was very agreeably surprised, by seeing the water fall down a precipice nearly perpenticulare to the depth of above 300. feet in a deep gloomy hollow all at once; I was anxious of getting down to the bottom, which I with some difficulty dit & indeed a more romantick scene I never beheld; the vegetation is chiefly, Hemlock & Mapple—I observed here a beautifull species of Hypnum, which covers the ground: Pyrola secunda & umbellata in great plenty: Lycopodium serratum & complanatum likewise:—Nothing new in vegetation—I expected to find some impressions here, as the bed of the brook looked somewhat like slate observed at Wilkesbarre but I turned up several stones and found none.—The rocks consist of of a grey slate, which sometimes gives very good wetstones.

This hollow follows the run with very steep banks as far as I dit trace it; From here, after having my curiosity satisfied I proceeded down the hill again & arrived at night at Onondaga. In my way there I observed Onosmodium–Amaranthus albus, &c.

14. 15. 16. These three days being very much interrupted with rain I dit but little go out; & when I dit seen nothing worth noticing:—My anxiety of getting away from here is beyond all description.

17. This day all the place was alive with the muster of militia for a drafting of them. I was not well all day.

18. Having nothing else to do, and being almost out of patience of staying any longer at this place, I took a walk to Salt point, went through the marshes and along the banks of the lake, without any thing materially worth notice: I had not before observed the Gymnocladus canadensis grows on the banks of this lake, but I dit not see one large tree of all being very criply & small.

I found Lobelia Claytoniana—Gerardia purpurea—Lysimachia ciliata &c. most every body in this place is inflicted with a bad cold or catarrh which they call the influenza.

19. 20. 21. Those days I spent in expectation of letters for my departure: not being able to account for the delay I was out of all patience & if it had not been for want of money I should return to Philadelphia the nearest route I could find. I wrote the 21st to Dr. B. on the the subject.—I have not the heart of doing any thing for spleen & sorrow.—On a walk I found near Onondaga court house Dipsacus laciniata? wild.

22. To day at last I received a letter I so long had looked for, with anxiety including 20 Dll—As my bill and expences here were very high, not much was left to me to go upon; but still when I am on the Road, I can make my way cheaper, than when I stay at a place: I set about preparing myself immediately & beginn my journey to Vermont on Monday next.

23. This morning I found myself very ill; the Influenza prevalent to a very high degree hereabouts got hold of me likewise, & attacked me with the most violent headache, ever I have felt, I was forced to lay down; as soon as got somewhat over the fever, I got some Thoroughwort set up with gin, which I used very freely, bathed my feet at night, in warm water & drank a large portion of sage thee;

24. Felt somewhat better this morning but affected with violent headache still all apetite for eating lost;

25. Somewhat recovered; headache ceasing: so I found people getting more & more sickly I concluded to leave this, as soon as I could any ways be able to stand the yourney.

26. 27. Recovering some I prepared for leaving this to-morrow, with the stage, as I

thought it the best way in my present situation to go on with it as far as it would be in my route.

28. Having inclosed specimens, seeds and minerals in a good box which I left to the care of Mr. Geddes I settled my bill here, & in the evening went off with the stage which only goes about 7. m. further on from here.

29. This morning we passed through the beautifull village of the Oneidas; it lays in a most charming situation. At night arrived at Utica: as the stage lays here over Sunday, I had to stay to; which would give me a chance of seeing some of the plants of this nighborhood.

30. Took an excursion about the town. among other common plants I observed here Clematis virginiana, Inula helenium, Rudbeckia laciniata, &c. but nothing worth any particular notice, in my walk I experienced the weakness which my sickness had occasioned, very much which lowered my spirits very considerable, as I thought what a situation I must come to if I should fall sick now, & be deprived of going on in my persuits; I really never have been more alarmed by my illness, than I am now, which must be owing to the relaxation & debility of all the frame, which this Influenza occasions.

31. From Utica I had about 50 m. to come where the road turns off to Johnstown, the route recommended me to go, to Ruttland & the heath of lake Champlain. I arrived at the falls of Mohock, where we dined about 2. o'clock; while they were preparing dinner I took a short excursion back to the falls; Here I observed Verbena officinalis, Verbascum Blattaria, Mentha spec. Potamogoton natans & several species of Aster & Solidago all very familiar to me; different sorts of the more common ferns covered the rocks: viz: Polypodium vulgare, Nephrodium dentatum, marginale &c. Here I left the stage & took up my lodging at the tavern for night, with intentions of going on towards Saratoga on foot to morrow.

Sept. 1. From Palatine church, where I stayd last night, I proceeded this morning on foot to the left of the stage road: the road leeds through a Pine woods, consisting chiefly of white Pine, & in place of beech & Hemlock; the Coreopsis bidens or I suppose what is calld now connata, got very common along the road side, in wet places. In the same situation Guaphalium inundatum is common, where the water is more plenty the Leersia oryzoides among the species of Juncas & Scirpus species is a common grass. I observed along fences a species of Galeopsis with flowers different from all the european, as I recollect. Hydroctyte americana is common here. After reaching Johnstown, a considerable village, I went on about 6 or 7. m. further where I put up for night.—Along the road sides here Tanacetum vulgare, Inula helenium, Sonchus canadensis &c. are common plants. In the valleys the productions are similar to the beechwoods.

2. This day I travelled through nothing but Pine Woods interspersed here & there with barrens of Dwarf Oak (Quercus prinos pumila:) nothing new. The plants in flower mentioned in the general Index. arrived at night at Balltown.

3. Balltown springs lay in a deep hollow. The situation very romantik. I expected to get something curious about this place and Saratoga.—The excursions about the grounds produced nothing new, I observed Veronica Anagallis aquatica—Bidens frondosa & bipinnata-Clematis virgin. Bupthalmum helianthoides—Mimulus alatus—Veronica scutellata. The road from Balltown to Saratoga, goes through barren pine woods, where I observed a species of Hieracium which I suppose is called H. scabrum Mich.—Glycine comosa is frequent. About Saratoga springs Campanula erinoides—Rudbeckia laciniata, several species of Nephrodium—Spiræa salicifolia-Eupatorium maculatum-Conium maculatum ? in great abundance. One of the springs calld the Rockspring at Saratoga is a great natural curiosity.—The rock projects in the shape of a flat cone about 4. feet above ground, & has an apature of about 10. inches in the middle out of which they get the water, which is about 3. feet down & makes a continued noise, like it were boiling.—The country about here is barren & not answering my expectations of finding some curiositys. The soil is full of limestone & the rocks chiefly consist of this and a species of gray granit like wake mixed with calcareous particles.

4. Left Saratoga the road through barren pine woods mixed sometimes with Shrub Oak, Podalyria tinctoria, Helianthus frondosus—Lobelia Claytoniana &c. nothing new. stayed over night 6. m. from Glems falls.

STRAWBERRIES.

BY EDWIN SATTERTHWAITE.

Read before the Pennsylvania Hort. Society, June, 1st, '69.

It was not until 48 hours since that I knew of my appointment as the essayist of this evening. Just two days ago I accidentally came into possession of the information that I had been appointed to prepare an essay to be read this evening before this society, on the subject of Strawberries. I should have taken pleasure in endeavoring to perform with credit the task assigned to me, had I received timely notice of my appointment. As there is no subject connected with horticulture that I feel more interested in, and having been for twenty years pretty largely engaged in the culture of Strawberries, and having given it the closest personal attention, I feel, I confess, entirely familiar with the subject. Had time been allowed me I should have taken pains to collect statistics which would show that this is really a subject of great importance, and well worthy of an evening's discussion. It is within the memory of many of the members of this society, that the culture of what is called small fruit, at the head of which stand Strawberries, has grown up to be, what it now is, a very important branch of productive industry. Twenty five years ago the culture of Strawberries in large quantities as a market product, was almost unknown. Now hundreds of acres in the vicinity of this place are devoted to this purpose; affording a remunerative occupation to the cultivators, and healthful employment to thousands of our needy population in gathering the crop. Perhaps the first noticeable epoch in the history of the Strawberry, was the production some twenty-five years ago of the far famed "Hovey's Seedling," by the celebrated horticulturist whose name it bears. This was a great step in advance, and seemed to give a stimulus to the production of improved varieties, that has gone on increasing in an accelerated ratio, until the number has become so great as to make it quite out of the power of any one cultivator to make even a collection of all the *celebrated* varieties, much less to test their value.

The next great epoch in Strawberry culture after the advent of the "Hovey," was the introduction some twelve years ago of that wonderfully productive variety, the "Albany Seedling." The production of this fruit will justly immortalize the name of its propagator, John Wilson of Albany. Brought out as it was, modestly, without any flourish, it has done more by far, than any other variety, to establish the business of growing Strawberries in this part of the world, as a permanent and profitable branch of terraculture. The "Hovey Seedling," opened the eyes of horticulturist to the capacity of the Strawberry for improvement in all the good qualities of the fruit, and the "Wilson's Albany" demonstrated that it was capable of producing an amount of food per acre, that is exceeded but by few products of the soil

It may seem strange, and certainly it is to be regretted, that as largely as this fruit is now cultivated, and with the great number of fine varieties that we now have, varying in their habits, so that some may be found adapted to every variety of soil and situation, its cultivation is very far from being as general as it should be. A long and extensive experience in the culture of this fruit, enables me to speak with confidence, when I say, that no product of the soil that I am acquainted with, yields a more bountiful and sure return for the labor bestowed, when that labor is intelligently and skilfully directed. And certainly there are few, but who will agree with me that no other fruit or vegetable is more grateful to the appetite or more wholesome,—coming as it does, the first fruit of the season, and at a season of the year when fruit is not only the greatest of luxuries, but absolutely necessary to health.

To me, it has long been a subject of amazement, that a very large proportion of the cultivators of the soil in this country neglect to grow, as they should do, a bountiful supply for their families of this delicious fruit. There really is no good reason, why Strawberries should not be grown in sufficient abundance every year, on every farm in the country; for the culture of this fruit is attended with less real difficulty than that of any other fruit. I speak advisedly when I say this. In the culture of all other fruits, difficulties are encountered that are sometimes insurmountable, and failure often unavoidable.

In this part of the world, all our tree fruits have become almost worthless from the ravages of the curculio, and for this, no remedy has been devised, and no amount of skill or labor can overcome the difficulty. Other small fruits are liable to fail from the severity of the winter, or late frosts, or cold storms in the spring. The Grape has innumerable maladies, that seem to be without remedy, and with it, with all the care that can be bestowed, failure is the rule, and success

the exception. Drought, which sometimes cuts short the crops of other small fruits, affects but slightly the Strawberry crop, if they have received proper attention. Strawberries require a certain amount of intelligent labor, but with that they never fail; unlike all other fruits they appear to have no insect enemies. In twenty years experience in the extensive culture of all kinds of agricultural and horticultural products, I have found this to be the most certain of all. I have never failed in growing an abundant crop.

It is in the country and on the farm alone, that the Strawberry can, and ought to be enjoyed in its greatest excellence, and the almost total neglect that it there receives seems to be utterly inexcusable, though not altogether unaccountable. There are I suppose but few cultivators of the soil, but who, sometimes in their lives make the attempt, generally unsuccessful, to grow Strawberries. And it shall be my object in the few remarks to which I am confined, by the limited time allowed in their preparation, to endeavor to point out some of the causes of this failure. I have said that the actual labor necessary to produce a crop of Strawberries is not so great, if that labor is guided by skill and intelligence. And the great trouble is, that most persons go into it with their heads full of erroneous ideas upon the subject, derived from theoretical essayists, who have no practical knowledge of what they are writing about. It is much to regretted, but seems to be unavoidable, that all the useful information obtainable from the mass of stuff daily printed, upon agricultural subjects is like a grain of wheat in a bushel of chaff. This is because people who write seldom work, and those who work, have no inclination to write. I have noticed that all, of the many writers who constantly undertake to enlighten the public upon this subject through the newspapers, recommend Summer ar Fall planting; this is the first great mistake. When Strawberries are ripe, the fortunate possessor of a farm or garden thinks it would be delightful to have a supply of this delicious fruit on his own premises, and makes up his mind to grow a crop next year. The idea of waiting two years for a crop of anything is utterly out of the question with most cultivators. Having read in the *Tribune* that August was the proper time to plant Strawberries, he goes to work at once to prepare for the crop. It is in vain he is told by the market gardener where he goes to procure his plants, that the Spring is the proper time to plant Strawberries He has read of the wonderful crops obtained the next year from plants set out in the fall, and he can't think of losing a whole year. So the plants are procured, and with much patient care and time spent in watering and nursing them, a few are persuaded to live, and some even make a feeble growth. The next Spring, the Strawberry patch presents a rather unpromising appearance, with here and there a feeble looking plant, and huge intervals of empty space in the rows. Still the hopeful proprietor is sanguine of at least a part of a crop. He is sure he has earned it, as he has spent a deal of labor, and done everything laid down in the books to insure success. Great is his disappointment to find his crop of fruit barely a taste for the neighboring Catbird or Robin Still he is not ready to give the matter up. He is determined that all the hard labor he has bestowed in digging and trenching and hoeing and watering and weeding, and money spent for plants and for phosphates and fertilizers, shall not be thrown away. He thinks the fall must have been too dry, or the winter too severe, or the spring too unfavorable, and the crop will be a sure thing next year. Accordingly he goes to work as soon as a few runners have taken root to fill up the gaps in his rows. He finds now the soil hard and unpromising in appearance, and the plants now set out have even a harder struggle for existence than their predecessors. The prospect is not encouraging. The owner finds a vast amount of tedious labor necessary to save his Strawberries from being choked to death with other vegetation. All the weeds known and unknown persist in growing there; and all the grasses, cultivated and uncultivated spring up from the manure used as a mulch, to use a homely expression, as thick as the hair on a dog. For a time, the warfare against these is doggedly kept up, but human patience has its limit. By and by the idea of Strawberries becomes associated in his mind with unpleasant recollections of fatiguing and unprofitable toil, and the Strawberry patch finally abandoned to its fate, becomes a sod. The owner avoids its sight as much as possible. Strawberries are a humbug, his mind is made up about that, and he never wants to hear the word mentioned. When the Strawberry season comes round again and the good wife comes to look for the long wished for fruit, she is rewarded after much patient research, of the sight deep down amongst the clover, of a few pale acid berries. A crop of grass

is gathered instead of a crop of Strawberries, and thus the experiment is ended. In nineteen cases out of twenty of the attempts to grow Strawberries this is about the result.

The main cause of failure in this case, was, as I have said, planting in the wrong season of the year. Had this man been willing to wait till spring, and been contented to obtain a full crop of fruit the following year, he would no doubt have found, that Strawberries require a deal of work, but with quarter of the labor actually bestowed, he would have had a crop at least sufficient to have encouraged further efforts.

I have mentioned this cause of failure particularly because I have noticed it to be more common than any other. There are of course many other mistakes that are commonly made, which I have not time now to speak of.

Next to the season of planting, the most important matter and about which the most mistakes are made, is in obtaining the proper varieties. Some will have only a certain sort, that they have seen extensively puffed, and which is perhaps a miserable grower at best, and will not do at all in their soil; with others, all Strawberries are alike, and they plant such as they can get the cheapest, perhaps from some ignorant market gardener who has some old worthless variety that has been in the family for a quarter of a century. I have known a farmer to save the cost of a few plants, to dig up wild ones and plant them; he might as well gather the seeds of wild carrots from his fence rows and plant them to save the expense of a few seeds.

It must be admitted, that amateur Strawberry growers are oftimes cheated in the plants they purchase. Many nurserymen are careless enough to let their varieties get mixed and send them out in that condition; sometimes with a few plants of some strong growing and worthless sort amongst them, which soon get possession of the whole bed. I have very often known this to happen. I have invariably found the Albany Seedling to be sent out by nurserymen in this condition. Some nurserymen have also done much harm to the cause of Strawberry culture by sending out a great number of worthless seedlings with high recommendations. I could name one establishment in particular, near New York, that has inflicted immense trouble and loss upon experimental culturists, by this abominable practice of sending out hundreds of new seedlings, each one represented to be better than any other, and all of them worthless.

While on the subject of varieties, I may as well say all that I have to say on that subject. The number of fine varieties is now infinite, and to choose the proper sorts to plant, has become the most perplexing part of the whole business. It would, I think, in the present state of Strawberry culture, be wrong to recommend unreservedly any particular varieties, as some are best adapted to some soils and situations and modes of culture, and some to others, and none are suitable for all. The varieties that do well in our Pennsylvania loams with high cultivation, rarely do well in the light sandy soils of New Jersey, and vice versa, even in the same locality, and where there is no apparent difference in the soil or surroundings, I have noticed the most striking difference in the productiveness of the same variety; so that it seems impossible to say with any degree of certainty that any particular variety will do best in any location. My remarks therefore on this subject must be very general. In selecting varieties for planting for market purposes, the first requisite is large size. They should also be firm-fleshed and as nearly as possible of a bright scarlet color. If it has these properties, the flavor is not of much consequence, at least that is my experience. All Strawberries are good enough, the only thing required is that they should present a fine appearance. Of course, for profit, in addition to the above qualities, they must be productive, and what I have found to be of great importance, they should be strong growers, as I have found by experience that strong growing varieties require far less labor in cultivation. I have been reluctantly compelled to abandon the Albany Seedling almost entirely on this account, it being comparatively a poor grower and requiring too much labor in its cultivation. I would say also that I never knew any foreign variety to do well for any length of time; I would therefore not recommend them. The best plan would seem to be for every one to experiment a little with those sorts that he sees doing well and continue to cultivate those that do best for him. I will however name a few of the sorts that I have found on several years trial to continue the most profitable of a great many sorts that I have tried.

The first of these is the Lady Finger. It is too well known to need description. It is not of the largest size, but of a most beautiful color, and bears carriage to market better than any other variety that I am acquainted with. It has proved with me a most abundant bearer, and

one of the best growers that I know. It grows with me so luxuriantly as to requre very little labor in weeding. I have had beds of it in bearing for five years, which kept perfectly clean with almost no labor, and bore abundant crops to the last. Though this variety has done so well with me, I cannot recommend others to plant it largely without a trial, as from some reason I cannot explain, it does not generally give satisfaction. In the light soils of New Jersey, where it grows with much less foliage, it color is too dark to sell well.

Next in point of profit I must name the Russell's Prolific. It is of of very large size, and has proved with me exceedingly productive, and is an excellent grower.

The Agriculturist I find a valuable variety, very large, productive, and a good grower.

I also continue to cultivate, to some extent, Downer's Prolific, Austin, and a few other old sorts which continue to do well. I have also on trial a number of new sorts that promise well.

This is my plan as regards varieties I try, then judge for myself, and this is what I would recommend to others. I find that I have nearly exhausted my time, and have as yet said nothing upon the most important part of the subject, that of cultivation, and perhaps all that I may say upon this subject will not be of much account, as my belief is, that the cultivation of anything can only be learned by practical observation and experience. I do not consider any particular preparation of the soil necessary for Strawberries. The ground should be prepared as for planting other garden products ; my plan is to plant in rows 2½ feet apart, and from one to two feet in the row, always in the month of April. As soon as the weeds start to grow, the horse cultivator is put in, and we continue to use this the whole season ; the row of course must be cleaned out perfectly clean with the hoe and by hand, this is all that is necessary. The cultivator will draw the runners along the row and keep the space open between them As the season advances, the rows gradually widen by the runners taking root, and in the fall they should have formed beds from 1½ to 2 feet in width. The cultivator, of course must be gradually narrowed, and finally but one tooth is used.

The following year, after the picking season is over, if the beds are to be kept for another year, the cultivator with one tooth is used to keep open the walks, the beds must be weeded by hand. We commonly pick our beds for two seasons, sometimes more and sometimes only once, according to the state they happen to be in. In the winter, when the earth is hard frozen, the whole ground, the walks as well as the beds, is covered evenly and carefully with stable manure. The plants grow up through this in the spring, and it serves to keep the fruit clean. Great care must be taken to get manure that is clear of hay seed, as grass is the one great enemy of the strawberry.

I have followed this plan for 20 years, and have never seen any cause to wish to change it for any other.

The large Strawberry-growers of New Jersey and other places, cultivate in beds double this width, and I suppose find that to suit them best. The much talked of plan of growing in hills, I never had any faith in. I have tried it on a small scale, without success. The great Strawberry-grower, Mr. Knox of Pittsburg, advocates this, as the only true plan, and he certainly grows one, and I believe only one, variety with great success. I do not profess, as he does, to grow strawberries by the fifty acres ; but I am sure, when I saw his Strawberry crop, three years ago, there was not as much fruit on his whole fifty acres, as I can now show on three acres. I no not mention this in any spirit of boasting, but merely as a means of comparing the two systems of cultivation. I wish it to be understood, that in making these remarks I am not advocating any particular system of culture as better than any other. The essential part, so far as mere cultivation is concerned, seems to be to keep the beds clear of weeds and grass ; and any system of cultivation that will do this perfectly, and with the least labor, is the best. I might add, that I think it important that the ground should be stirred, and the runners trained along the rows, so that the beds will be compact, and the walks between them kept open. I know of no implement that will do this so effectually, and with such facility, as the common horse cultivator; and I will just say here that I consider horse culture, or, what is better, mule culture, by far the best for everything of the kind, as it stirs the ground more thoroughly than is ever done with the hoe.

The question of wide or narrow beds is only important as it regards the facility of gathering the fruit in the best condition, and would be worth discussing, if time allowed.

The relative merits of the "Hill" and "Bed" systems have been so thoroughly discussed that there is probably nothing new left to be said on that subject, and nothing but facts can settle it.

There are a thousand other questions connected with this subject, which it would be interesting to discuss, but fearing that I have already trespassed too long on your patience, I will leave to others the further discussion of the subject.

EDITORIAL.

THE CHANGED CONDITION OF AMERICAN GARDENING.

An intelligent English gentleman connected with one of the London papers, an ardent horticulturist, and well acquainted with the present status of gardening in England, recently called at our office, and taking up a recent number of the *Gardener's Monthly*, read the article on the above subject. He remarked that there was not so very much difference now between America and Europe in the tendency of gardening things. That when Americans said "gardening in America is not what it is England," they might with more truth say it is not as it was in England. He thought that people when they left a country, always thought of that country as they would of a beautiful picture they once saw, which remained the same in their minds as yesterday so to day, and forever. They forget that as people were moving on here, they were also moving there ; that the main springs of progress were nearly the same in both countries, and hence the results of these principles of marching civilization were very nearly the same.

Indeed results were there nearly the same as here. Gardeners were not there what they were once. The places where the utility class were required ; men who can mow or milk, or grow grapes and drive carriage, had wonderfully increased during the past twenty years, while the *great places* where the true artists in horticulture were once engaged, and threw such lustre on the profession, were rapidly decreasing in numbers, and he feared in a few generations would pass away. Horticultural journals which once received their chief support from gardeners, now had long lists of amateurs for their chief subscribers ; and instead of the long catalogue of first class gardeners who communicated their knowledge to the papers, these had to depend on men of science and general literature for their best communications. Horticultural societies which were once the wonder and admiration of the world, had dwindled down to be supported only by a few score of leaders,—and the societies themselves only lived by invested funds laid by during their former greatness, or else eked out a doubtful existence under the shadow of great names. The old race of men who built up the reputation of the English exhibitor for the honor and glory of the thing, had passed away, and no new men had followed, because "honor and glory did not pay."

The whole machinery of gardening had changed. Formerly the nursery and seedsmen were the great mediums through which gardeners obtained situations. This all helped to keep gardening together in one bond of interest. Now no places of any consequence were obtained in this way. The greatest part of the whole thing was done by advertising. A nurseryman hardly knew any more where to get a good gardener. Everybody went on their "own hook" The business had become individualized. Under the old plan which made the nurseryman in a certain sense responsible, he sent only those whom he knew to be good gardeners ; and his knowledge of what a good gardener ought to be, enabled him to select really good gardeners ; but under the present individualized system, one man was nearly as good as another. He who did the most "blowing," and advertised the most persistently, generally got the best places.

How in all this cannot we see the mirror of our own circumstances ? And may we not profit by it ? Because gardening is not what it once was, is that any cause for repining ? If our horticultural societies, and fruit conventions are not as well sustained as formerly, let us not therefore think gardening is declining. It is but following the law of progression which permeates and governs all things. It is but urging us on to other forms and other courses. The Onions and the cucumbers and the flesh pots of Egypt were very well in their day ; but if we by leaving these are to get to a land flowing with milk and honey, probably we shall lose nothing by the change.

GARDEN STRAWBERRIES.

We give this month an essay by Mr. Satterthwaite, on Strawberry culture, which has unusual merit in this that it throws out some entirely new points. If we take up new books on the Strawberry, or the more recent newspaper articles, we find all but thrice told tales. It is a great relief to turn from these to an original pro-

duction like this, which gives us something to think over and ponder on.

One of the strongest of the original features in this essay, is the unqualified condemnation of fall planting Like everything which flows from Mr. Satterthwaite's mind, this idea has strong reasons to sustain it. Indeed from his standpoint, the market gardeners, it is unanswerable. We think for market purposes, fall planting decidedly does not pay. We also go a great length with him in believing that in many cases in amateur gardening fall planting is a failure ; but we cannot go the whole way and condemn fall planting under any and every circumstance.

Garden culture is a different thing from field culture. It is in fact quite another art. The one is a genuine part of Horticulture ; the other partakes rather of an agricultural cast. Agriculture and horticulture may be as Mr. Wilder beautifully suggested to Mrs. Sigourney "twin sisters ;" but they differ in constitution,and taste, and dress. The one is satisfied to be clothed in homespun, and is happy in having enough to eat ; the other must have the nicest delicacies of the season, must display costly and tasteful ornaments, and must adorn its home with all the choicest luxuries of life. The one cannot judge of the wants of the other, except in so far as it can enter into its spirit which in fact it seldom does.

If the market gardener can heap his measure and swell his bank account, it is well ; and he is unable to understand the little delicacies of spirit and taste which are satisfied with the prettily garnished plate on the dinner or supper table. A Strawberry is a Strawberry, would say the market man ; it is not a matter of fruit, but of sugar and cream. This is true much oftener than we willingly believe, but not by any means is it the whole story.

The fact is, true horticultural taste as distinguished from agricultural operations places excellence as its highest aim. Pecuniary profit is not its divinity, Mammon worship is not its crime. No operation of gardening can be measured by dollars and cents, no more than we can place a price on the pleasure of a good picture, or the enjoyment we find in the company of an agreeable friend.

And thus it is in the true horticulture of the Strawberry ; we would have fall planting one of its most esteemed operations,—not as it is often done, and as badly done as Mr. Satterthwaite paints it,—but as an operation rightly performed, which will give a great amount of pleasant satisfaction. The proper way to proceed is to layer the strongest runners into small pots, or better still as our "hint" writer says, in small square boxes, in rich soil, as soon as they are strong enough to peg down ; then in September take them out and plant in the good garden ground prepared for them. In this way one can have the next spring nearly as good a crop as in spring planting, and with the certain gain of a year's time in the operation.

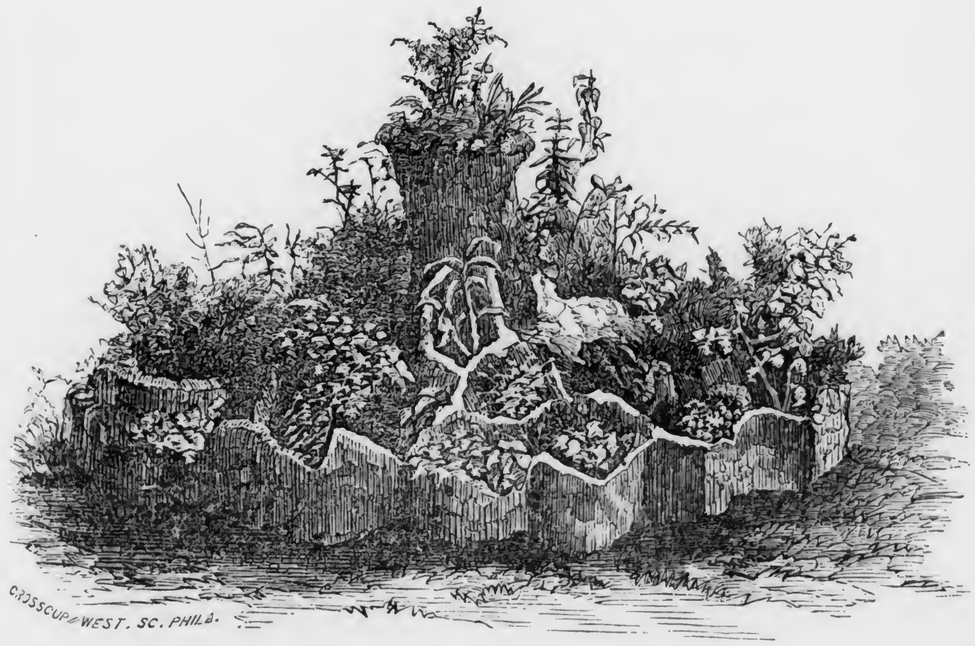
Another matter strikes us in reading over Mr. Satterthwaite's essay,—we mean the very little real gain there has been in Strawberry improvement. It is as true of all other branches of pomological science as of this. We begin to wonder what has become of all the great labors in fruit improvement about which our patent friends tell us. Do we really owe much to those who have tried to raise new fruits ? Or has all that we most prize been the result of chance ? Keen's Seedling so long the leader, was a chance seedling. Hovey's Seedling, as we believe, was not the offspring of a very labored effort. Albany Seedling was so little anticipated, that the raiser or owner up to the time of his death hardly knew he had anything of value. In truth all our best fruits are accidents ; and the earnest efforts of our hybridizers and improvers from Knight and Van Mons to the present hour, have brought us nothing permanently of exceeding value. We begin to smile when we listen to Sophomoric speeches on horticultural occasions, about the "grand powers of those giants in horticulture who through long years of patient skill have changed the sour Crab into the delicious Baldwin, or the choke Pear into the most delicious of all fruits ;" and half quarrel with Darwin for the estimate he places on domestication, and the gardener's skill, in making new types, and indeed almost creating new species. Really there is little in our art to be thankful for. In nature everywhere, far away from the range of the gardener's skill, the attentive devotee many see changes as great as in the most skillful garden. The great laws of change are continually going on. New species, new forms, as new individuals, evolve in their own proper time. All art can do is to better foster and protect than nature can. In the struggle for life, many new forms get crowded out, which the gardener can save. He can weed out what he does not want, and save that which he does, and allow it every chance to do something for itself. This is all.

But some will say, how, if all this is true, will you encourage us to introduce new things ? Simply by continuing to raise seedlings by the hundreds and thousands ; watching for, and selecting the best ; and not by feeling that some horticultural inspiration is necessary to clothe a man with the necessary ability to raise them.

There are some other matters in Mr. Satterthwaite's paper, which are very suggestive ; but with these two reflections we will leave the subject for our readers to digest the balance.

LAWN DECORATIONS.

Nothing is more amusing than the piles of building stone we sometimes see thrown together with a little "dirt" between them, on some otherwise well kept lawn, under the name of a *rockery*. Perhaps under some "principles of beauty" these abortions might be brought in to figure prominently,—but we have rather a dislike to beauty from any point in philosophy ; it is enough to know that they who follow most closely "natural principles" usually fail in pleasing any one but themselves. The stone heap principle may be a "natural one,"—may be consistent with the aphorism that "nature, unadorned, is adorned the most,"—and so on ; but to our mind there is great beauty in a thoroughly artificial rockery, when in place and character with every thing about it. We take the best test of the correctness of a principle to be, not so much an analysis, as the great popular verdict. What is universally conceded to be pretty, is a better judgment than all the accords with "natural laws."



We give herewith an illustration of a piece of Rockwork on the grounds of Mr. W. E. S. Baker of Germantown, which, tested by the laws of beauty we have laid down, has been pronounced a beautiful piece of work. It is in the front yard, between the windows and the street. The loca

tion, of course, has something to do with the effect. In reply to our inquiry for permission to take a sketch of it for our journal, Mr. Baker thus gives an account of its construction:

"Our Rockery will not have it summer dressing until say Tuesday next, when you can have it photographed or drafted at any time. It is oval; extreme length 10 feet, width 5 feet, height 4 feet, vase at top 2 feet across outside. It was my own getting up, built from two perch of stone and one barrel of cement, in 1860,—cost then $12, has not cost *a penny since*, and I never saw so *cheap* a thing to give so much pleasure; in fact, it has been admired by thousands, and copied all over the country. The stones are six inches under ground but each hole forms a complete flower pot, large and small; stones put together with cement; top vase held together with a hoop until dry. After all the stone-work was done, I threw *with hand, strongly*, against the stones a mixture of cement and water, which soon solidified, giving it the appearance of a solid piece of masonry."

We have given, in some of our back volumes, directions for making these rockeries with cement and small stones; but, as Cobbett says, an "ounce of example is worth a ton of theory," and this pretty piece of Mr. Baker's will make the idea more popular than our mere writing for a year would do.

SCRAPS AND QUERIES.

Rhubarb poisonous.—*M. L. L., Chester, Del.*: "There is some excitement in this part of the country about pie plant being poisonous to swine. It is said that about fifteen miles from here a large lot of hogs died from eating the leaves. We have always esteemed the plant for early spring tarts, but our family are now afraid to use it. My husband suggests that you could tell us more about this."

[We have seen some accounts "going the rounds" about this "poisoned flock of pigs;" but we suspect the death of these innocents was owing to other causes It is a relic of old time barbarism, to look to what we "eat last," after we get sick, and be sure that's it. You know perhaps the story of the oyster shells under the sick man's bed from which the wise doctor inferred that his patient had been eating these injurious bivalves, and prescribed accordingly, when all the time the patient had been innocent of the luxury. We have known Rhubarb leaves from time immemorial to be thrown into the "hog slop," and are quite sure the hog would not wait till 1869 to show the first ill effects thereof.

There is "poison" to be sure in Rhubarb leaves; oxalic acid. There is poison perhaps in everything we eat. There is poison certainly of the deadliest kind in the potato, and many other things; but in all these things there is no more injury to the system when used in the proper way, than in the slight disagreements with the system, which some people find to result from everything at times, and which are only known to individual experiences.]

The Buttonwood Disease.—"*Oblige an Elizabethtown, Pa, correspondent*, by saying through the *Monthly* if you know of any remedy for the Buttonwood disease, or if it is a disease; or anything more than the result of early frosts? I have a very pretty old tree on my farm, and would do a good deal to remedy its unsightliness in spring."

[We are not able to answer our correspondent, as we have not had the time to examine personally the subject close enough to be sure of the facts, and do not know of any one who has. We were told some years ago that Mr. Febiger, a microscopist of Wilmington, Del., had given some attention to it, and had clearly traced the cause. We should be glad to know whether this is so, and what his results were. Certainly it is not "frost." From analogy it may be of fungoid origin, although the appearance is very much like that resulting from the Steel Blue Beetle on the grape vine. An insect may be the cause, though we could never detect any. An interesting fact in connection with this subject is, that the European form was once exempt from the "disease;" but this year we notice many cases, not so bad as in the other, but bad enough where

the *Platanus orientalis* is suffering like his stronger American brother.]

Dingee & Conrad's Nursery at West Grove, Pa.—West Grove, on the Baltimore Central R. R., is about two hours ride from Philadelphia, and well situated for a first class nursery. The members of the firm have a well earned reputation for intelligence and enterprise in their profession, and being in the vicinity recently, we step'd in to see what they were doing. Unfortunately it rained heavily, and prevented a full examination of the grounds. Signs of prosperity were however abundant; not one of the least of which was a very elegant dwelling house just finished by the Senior partner, which for taste and beauty, will compare favorably with any in the vicinity.

On the grounds we found one of the heaviest stocks of Irish and Swedish junipers we have seen, now entering on their second years growth. Other popular evergreens such as Siberian arbor-vitæ were also in great abundance. The firm is famous for its Roses, which they propagate from winter cuttings very successfully. They are potted early, and kept in the houses until June, when they are grown all summer in the open ground. They were at this time setting out the last. They have also great success with the Blood-leaved Beech which are stock grafted, by the whip mode under cover during winter, and set out early in spring. Many hundreds were pushing out beautifully.

The leading stocks of the firm are Peaches and Apples, of which many thousands are grown annually; but owing to the bad weather, we were unable to see any of these portions of the grounds.

Sweet Briar Hedges—*J. S., Louisville, Ky*—"I am told that in Europe hedges are made out of the Sweet Briar, do you know how it is in this country. I am much interested in ornamental hedges."

[Hedges are made of it in Europe, and sometimes are seen in the United States; but become in time unsightly by many branches dying out, and leaving gaps. There is however so much that is beautiful in the Sweet Briar, so much to be enjoyed in its sweet blossoms, and still sweeter fragrance during the whole growing season, that we could endure a little unsightliness on its account. Possibly it may be that some severe systems of pruning have had to do with the occasional dying out of branches. We have not had a hedge of it under our eye for some years. Have any of our readers one? And will they tell us how it behaves?]

The Cherry and Versailles Currants.—*R., Laporte, Indiana*: "Is there any distinction between the Cherry and Versailles Currants. I have bought them both several times from respectable nurseryman, and they always come identical. If they are really the same as I suppose, is it not time one or the other name was dropped from catalogues."

[They are not at all the same in any respect but the size of the berry, which in both instances are of the largest size. The Versailles has a bunch nearly double the length of the Cherry; the berries are also sweeter, while the Cherry is very sour. Indeed the Versailles is little inferior to the Old Red Dutch in good properties, while it is nearly one third larger. The "Caucasian" and "Macrocarpa" we believe to be the same as the Versailles; but the Cherry, by no means.]

The Agave Americana—Flowering at Messrs Frosts and Co., Rochester, N. Y.—was a great treat to the Rochester people. Thousands of persons went to see it. It is altogether a very interesting thing. It seems strange that a plant should have to live for so many years to store together vitality enough for the one great effort of its life. But when we know the immense strain on it which the flowering occasions, it is not so much a surprise. Messrs Frost furnishes us with some figures showing its rate of growth. Vital force must have stored up immense power to be able to do so much in a short time. From May 5th to May 18th, the following was the progress:

May 5, 7 a. m.,	height of flower stem,				- 4 feet.
" 6, 7 "	growth	"	"	"	- 3inches.
" 7, 7 "	"	"	"	"	- 3⅛ "
" 8, 7 "	"	"	"	"	- 4 "
" 9, 9 "	"	"	"	"	- 4⅜ "
" 10, 7 "	"	"	"	"	- 4 "
" 11, 7 "	"	"	"	"	- 4⅞ "
" 12 7 "	"	"	"	"	- 5¾ "
" 13, 7 "	"	"	"	"	- 5⅝ "
" 14, 7 "	"	"	"	"	- 4⅛ "
" 15, 7 "	"	"	"	"	- 3⅜ "
" 16, 8 "	"	"	"	"	- 3⅛ "
" 17, 7 "	"	"	"	"	- 2¼ "
" 18, 7 "	"	"	"	"	- 1¾ "

It is unpleasant to feel that this great effort

should be the last throw of vitality,—that it must die after producing these flowers, especially after the many years of watching and care on the part of the gardener, but thus

"The fair beings we most fondly cherish,
Are placed within our breasts; but placed to perish."

BIGNONIA CAPREOLATA.—*C. & K., Abingdon, Va*, writes: "What is the name and nativity of the enclosed vine? It is hardy, and evergreen. Is it worth propagating."

[It is *Bignonia capreolata*, the golden or evergreen trumpet vine. Native of Virginia, Kentucky, Tennessee, and probably other Southern States. It is a very pretty thing. scarce in cultivation; but very desirable on account of its power of clinging to walls or buildings like ivy, without any support. We think the nursery trade would be glad to know that stocks could be had. It can be readily propagated where roots can be had in abundance, by cutting them in pieces about an inch long, and setting them out in a rich piece of ground in spring, covering them only about half an inch deep.]

PYRUS JAPONICA CUTTINGS.—"*A nursery reader*," *Rochester, N. Y*, writes: "I never could raise Pyrus japonica from cuttings, and have been told that the best way to grow them is from pieces of roots. I cut up a few, and put them in a box in a propagating house this spring. Truly they pushed out and I had high hopes; but they died back afterwards. I saw no new roots coming out. If it is no "trade secret," would you tell me through the *Monthly* how they are raised."

[The *Gardener's Monthly* has no secrets. We are always ready to tell in its pages all we know, so far as our limited knowledge goes. As to *Pyrus japonica*, there is no trouble in growing them. Burn your propagating box, and spread the ashes over a piece of ground in your garden; then get Pyrus roots and cut them into lengths of three inches, and dibble or set them in this nice piece of ground, so that the top of the root cutting will be level with the ground, and they will "all and each, in the manner aforesaid" grow like willows. This is the law of success There is to much "fooling" with propagating boxes in some quarters. No need of half the mystery that is prevalent about some things.]

SOLVENT FOR TAR.—A correspondent of the *Gardeners' Chronicle* recommends oil as the best means to remove tar.

VARIATIONS IN THE BLOODROOT.—*J. W. L., Philadelphia*, writes: "A *Sanguinaria Canadensis*, transplanted a week ago from the field to my house, where it was potted, developed at an inch and a half above the soil, a flower with but *four* petals. None of the authorities consulted speak of less than 8, (or occasionally 7) petals. A return to 4 (possibly the normal number) is counter to the tendency observable in domestication, as it is also another example of the numberless variations in wild flowers."

[We are very much obliged by this note, which we can turn to good account at some future time. *Domestication* has not near as much to do with change as it gets credit for. We *see* more, because we take care to preserve, and multiply the oddities. All our most curious double flowers—double Crowfoots, double Brambles, and so forth—were from families never cultivated, but were found wild. Mr. Meehan has shown this, in past numbers of the *American Naturalist*. Horticulture has treated nature very unjustly. She has taken to herself numberless credits, to which she is in no way entitled]

ROGERS' HYBRID GRAPES.—*T. N., Rock Island, Ill.*, asks: "Will you please to tell through the *Gardener's Monthly* what varieties of Vitis labrusca and Vitis vinifera have been used by Mr Rogers to produce his Hybrids?"

[We should be much obliged if Mr. Rogers would give us a full account of his experiments. Little pieces of the history have from time to time appeared; but nothing, we believe, in one whole together. When Mr Rogers first announced his *hybrids*, he was met with much ridicule from those who "knew the impossibility" of grapes hybridizing. The *Gardener's Monthly* was, we believe, amongst the first to show that these were real hybrids: and it is gratifying to find that the "impossibility" of grape hybrids has no believers of consequence now.]

NORTH CAROLINA PLANTS.—*J. L., Lenoir, Caldwell Co., N. C.*, writes: "A week ago in rambling through an unfrequented mountain glen, I came upon a cluster of "Azaleas" (I believe I've got the right name) quite different from any I ever saw before. The specimen which I enclose is badly dried, and gives but a poor idea of the richness of the original color, which was a rich buff tinged with pink. It may be, the variety is well known to florists. I confess my own great ignorance in regard to cultivated flowers

and shrubs, but if not generally known it would be quite an acquisition, both on account of its color. and because the fact that it is in bloom two to four weeks later than the pink and purple varieties, which grow in profusion in all the woods of Carolina.

I enclose also a specimen of a Fern, which is to me a new and interesting species I am so unfortunate as to be in a portion of country, where everybody is as ignorant of such matters as I am myself, so that I can gain no information by consulting the resident citizens.

I send these specimens to the editor of the *Gardener's Monthly*, knowing that if they are *new* or *rare* species, they will be received with pleasure; and if they are not new, it will not consume much time to consign them and my letter to the waste basket."

[The Azalea is *A. calendulacea*, and well worthy of the attention of cultivators in the districts where they grow wild. Many hundreds are imported *from Europe* every year, by our leading nurserymen; as the plant is becoming annually more in demand; and if they could be sold at lower prices, would be in still greater request. They bring from $1 to $2 each; flowering plants. The best way is to get them from the woods early in spring; set them rather closely in rows, and cut them back about one half or two-thirds. They will push out again, and in about two years would make saleable flowering plants.

The pretty fern is *Cheilanthus tomentosa*. We trust our friends will get over their horror of our "waste basket..' It is very rarely that we receive a note from even the most ignorant, that we do not ourselves profit by.]

GROUND ALMONDS—*Subscriber, Yonkers, N. Y.*—"Will you please state through the *Monthly* the botanical name, natural order, and native country, of what is sold in the seed stores under the name of Ground Almonds? A brief description of its proper cultivation would be quite welcome, but if not convenient, the answer to the above question will be sufficient. And as I am addressing you, allow me to return my thanks to you for the article in the January number on 'Good Gardeners.'"

[The Ground Almond, or "Earth-nut," is a native of the sandy shores of the Mediterranean, and is a *Cyperaceous* plant, or that family which is represented so abundantly in meadows and and woods everywhere as "Sedge grasses." This one is *Cyperus esculentus*.

The "nuts" are small tubers, which it produces like potatoes, and resemble almonds in taste and form.

Many of our native Cyperus have tubers also, but are not of any value. The cultivation is easy enough; for they are as hard to get rid of as Garlic or the Canada Thistle. Probably, however, they would not endure the winter at Yonkers, and hence would not be troublesome on that score.]

CARNATIONS—*H. C., Harrisburg, Pa.*—"Can you tell me what is the matter with my Carnations? They seem to do well for a year, and then dwindle and die away? I have now but a dozen left of a hundred I had several years ago."

[To have Carnations in good order, new plants should be made by layering every year. In May cut a slit in the side shoots near the ground, and mound up about them with rich earth, into which they will root from the slits. They may either be cut off and planted elsewhere in the spring, or left to flower where they are.]

SOLANUM FENDLERI.—We are indebted to a friend for a few tubers of this potato, which is a native of New Mexico, and is very closely allied to the common potato, *S. tuberosum*. The plant and flowers, of which we have dried specimens from further south, are very much like those of the common potato. These tubers are small; about the size of bush beans, and are distinct from the common species of potato, in having glandular dots profusely covering the surface.

ELM AND MAPLE SEEDS—*Several Inquirers.*—Elm and Red Maple will keep till spring. Silver or soft Maple must be sown as soon as it matures.

PRESERVED FRUITS.—Our attentive and courteous friend, Mr. L. Blodgett, sends us some fruits from the Helling's Preserving-house, which, though the middle of May, have their stems as fresh and green, and their skins as plump and blooming, as if fresh gathered from the tree. The flavor was not quite equal to fresh gathered fruits, except perhaps that of the Northern Spy apples,—these were delicious.

TRIFOLIUM INCARNATUM.—*A. & A., Richmond, Va.*, write: "Please give us the botanical and commercial names for the enclosed. It is a species of clover, in cultivation by the German milkmen in this neighborhood, the seed having been brought over by their ancestors, and the name is not known. They sow it in August, and as you see, it is now in full bloom, yielding a large amount of green forage, or hay, being much earlier than the ordinary Red clover. They say it is an annual. We wish to procure the seed, in this country if we can, if not, in Europe."

[This is *Trifolium incarnatum*. It has long been grown in gardens of the north, more on account of its rich blossoms, as an ornamental garden plant. Seeds can be had of most large seed stores, though we believe only in limited quantities. In northern or central agriculture, it seems to supply no want. In the South, where the great want is for good forage plants, it is well worthy of more attention.]

FEEDING ROOTS.—We find the following in our exchanges:

"The idea that the extreme ends, or *spongiotes*, of the roots supply all or most of the plant food for trees, is controverted by Mr. Suel Foster, in the *Western Rural*. He says that while the tree is growing all the roots, the stalk, branches and leaves are at work, and he believes nat every part of the root coming in contact with the moist soil, absorbs moisture, and that in all this moisture there is plant food,"

Mr. Foster is right, of course. A cutting of an Oleander, without any roots at all, will live in a bottle of water for a year, and to that extent will absorb "food;" and yet, it is equally true, that it will not add much to its size by growth, until it throws out fibrils from the points of which the real plant food is undoubtedly taken in, whether the old theory about *spongioles* be true or not.

SEEDLING CALCEOLARIAS.—Messrs. Elliott Bros. & Burgess, Pittsburgh, Pa., send us very pretty specimens of their Seedling Calceolarias. These pretty summer flowering plants are not as common as they ought to be; their culture not being understood. They do not like very hot weather, and to grow them successfully they should have as cool a place, with plenty of light, and yet shaded from the hot sun.

AGARICUS MUSCARIUS.—Alluding to the beautiful fungus of which we gave an illustration in our last December number, an exchange says it supplies 40,000,000 of the inhabitants of Siberia and northern Asia with means of intoxication.

THE AMERICAN POMOLOGICAL SOCIETY.—Utah, we see by the Western papers, will send delegates to the Philadelphia Convention. A California paper says some will come from England, naming Rivers as one; but this we believe an error.

RUSSIAN INTERNATIONAL HORTICULTURAL EXHIBITION opened at Moscow on May 16. The English and Ghent plant growers have carried off many of the premiums.

BOOKS, CATALOGUES, &C.

PARSONS ON THE ROSE. By S. B. Parsons. New York: Orange Judd & Co. A New Edition.

Recently Dr. Rush, the second great man of the name and profession in Philadelphia, died, leaving to that city nearly one million of dollars towards establishing a great free library. In his will bequeathing this sum, he gave details as to how he would like his wishes carried out. Amongst other things, he objected to reviews, magazines, and newspapers forming part of the collection, as encouraging too much a class of "*disjointed thinkers*;" and of course many serials devoted to this class of literature, take offence at the phrase. If we look at a large portion of the so called "books" which Dr. Rush's will would encourage to the exclusion of these objectionable papers, one might be amused at the idea of the one being advanced at the expense of the other,—but looking at the matter in the light which no doubt induced the legator to write what he did, namely, a desire to encourage a higher and more intelligent class of writers to enter the literary field, few will object to the expression. But it is not only magazines and reviews which afford specimens of "disjointed thinking." Our library shelves are borne down by books, which, valuable as they are in a practical sense, bear no comparison with those of the past age in literary merit. Indeed it has become fashionable with many modern authors to claim as among their excellencies an ignorance of fine writing,—just as the rude boor excuses himself for his want of goood manners, on account of the goodness of his heart. No doubt much of all this is due to the tendencies of the time. In the past age knowledge was the privilege of wealth. The intelligent were the idle, and to labor was synonymous with poverty and ignorance. Thus literary merit became associated with the impracticable; and one who had to earn his bread by his own labor at a trade or profession, actually injured himself by engaging in literary work. He lost caste with his patrons at once, and ran the risk of starvation. The great Dr. Darwin, who had to get his living by the practice of medicine, reduced so much the number of his patients by the publication of some of his works, that he was for a long time afraid to publish his "Botanic Garden," by which he afterwards became so well known; and in our own city, the father of the Dr. Rush now in question, one of the most learned of the medical authors of his day, had precisely the same experience. He and the well-known Dr. Barton, the father of medical botany in this country, and the contemporary of Dr. Rush, lost patients exactly in proportion to the increasing popularity of their literary works. But when education broke through the narrow shell which confined it, and exhibited its gay plumage to the admiring crowd, the order of things was changed Practical men first admired authors, and ultimately entered the ranks themselves. With a just contempt for the "learning of the schools," they unfortunately learned to despise dignity and good taste; and thus grace and elegance, and purity, gave way to general utility alone. Gardening particularly has suffered from this cause. It is very rare that we take up a book of the more recent time that affords any pleasure beyond the mere practical knowledge it imparts. We have to go back to the time of Price or Whately if we would drink fully of the pure waters of intellectual life. Were it not for Downing and Lindley we should have had no soul to connect our period with the past living age. Nothing but the dryest and dreariest detail of dead facts.

It is a pleasure to note that highly cultivated pens are again engaged on our cause. Writers like Parkman and Parsons, carry us back to the good old days, with the additional advantage of a thoroughly practical knowledge added to the literary charm they throw around their task. With Parsons on the Rose, Parkman on the same, and Downing's Landscape Gardening, we shall not so much miss "Essays on Modern Gardening," whenever we hunger and thirst after some relaxation from the perusal of the rough and uncultivated books with which modern gardening in common with all modern arts, abounds.

"*Parsons on the Rose*" has always been a favorite with us. The author seems to have felt under the necessity of bending a little to the utilitarian spirit of the age, and tells us he has left out much of the poetry in this edition. We do not know that this will be a permanent advantage. No one can truly love the rose without having the essence of poetry in his nature; and the poetry of the rose will live for years,—long after many of the varieties so minutely described in the book shall have passed into the grave of time. And we should like to quarrel about a few other things, only that we remember that how long and bloody wars have arisen in which roses have borne a conspicuous part; and we have no taste for a long fight. Yet we cannot but think that the author might have honored a little more the Rose prophets of his own country, even though he left out a little of that given to the sages of other lands. He has, for instance, followed in the wake of some English author who, having once confounded the Eglantine with the Sweet Briar, has been imitated by most of the copying book makers since that time. It is strange that Mr. Parsons himself has not detected the error, as he has noticed that the best English growers refer to the "Dog Rose or Eglantine," (see page 121), as the best stock to bud tree Roses on, and intelligent Rose men like Mr. Parsons must know that the Sweet Briar is not and never has been used as a stock; and that therefore Dog Rose and Eglantine are erroneously employed as synonymous terms. We know that almost all English writers of the past fifty years give the *Eglantine* to the Sweet Briar; but the practical Rose growers, and the peasantry of England,—the best authorities for vulgar names,—tell a different tale.

THE PRACTICAL POULTRY KEEPER. By L. Wright, from Orange Judd, & Co., New York.

Once we thought we should never love chickens. We almost despised any gardener who said he could love chickens. Had we had the tormenting of Job, we should have sent chickens amongst his rare seeds in the garden. But we have lived to repent. We have returned from our evil ways; and it happened in this wise. The writer al-

lowed himself to be pursuaded by one to whom in his heart he had no inclination to deny much, that "Bantams would'nt scratch," and they were allowed the privilege. Gradually they grew to Hamburgs, and eventually to Shanghais and Brahmapootras, until we began to take as much interest in the thing as the ladies themselves. We found that it was not the thing to complain about Satan. Satan must be; and it is better to charm the old fellow and make him work to our advantage, than die in the vain struggle to cast him out. So we built the chicken house and the chicken yard, and we found the old Satan which had troubled us so many years, was not half so black as he was painted; indeed we do not know but we shall soon be ready to advocate that a chicken yard is one of the most interesting and profitable adjuncts to every well ordered garden.

Our yard is small, but yet we find by digging over the earth about once a week, the feathered inhabitants are kept perfectly healthy. The soil thus imbued with fertilizing matter is hauled completely out in spring, and grows immense vegetables. New soil from any old bank is hauled in, and furnishes the manure pile for next year. At certain seasons the fowls are let out when they can do no injury to the crops, and they pay well by the immense amount of larvæ they consume; while the young chicks, not too large to hurt by scratching, will earn their keep by eating insects all the day from every opening leaf and flower. To be sure we have to endure many a taunt for our obstinancy so long. "We might have had fresh laid eggs every morning in spring;" "curculios might have been kept down, and we might have had lots of cherries and apricots," and so on "long ago" only for our blindness to "the real facts;" but as we know we deserve it all, we take the punishment, and are thankful it is no worse.

We welcome this beautiful book therefore, as a good addition to our *horticultural* library; for though we now think we know "some" about chickens, we are not yet too old to know more; and after a very pleasant run through this work we feel that in our ignorance of some things we shall by no means stand alone. Many of our readers will profit as much by it as we have. It is an English book which there is so popular as to have already run through three editions. Messrs Judd & Co., have got this American edition out in beautiful style, and with the illustrations as perfect as the firm is usually famous for.

THE AMERICAN ENTOMOLOGIST.

We have frequently referred to this monthly now approaching the end of its first year. It is doing a most useful work. There is nothing equal to it in the interest which it throws about its special subjects, either in this country or in Europe. We believe it is achieving wide spread popularity, which it every way deserves. We suppose every reader of the *Gardener's Monthly* subscribes to it, and this notice will not make them the more highly appreciate it; we only refer to it therefore to suggest to our readers that they push it amongst their friends.

HEARTH AND HOME.

This new enterprise is now in its first half year's existence, and we are glad to see has the affections of the popular heart. It has pursued steadily the object with which it started, and is carrying a taste for horticulture and the Rural arts into the higher classes of society, a field which badly needed cultivating; and we are very glad that it is meeting with the success its merits deserve.

NEW AND RARE FRUITS.

THE MEXICAN STRAWBERRY.—We noticed in our last, that this appeared, from the published descriptions, something new. We have also seen it described since then as a new species, by Mr. Clinton of Buffalo, as *Fragaria Gillmani*.

We are now favored with specimens, and find it is but the well known form of *F. vesca*, the common Strawberry, which, under the names of *F. collina*, *F. semperflorens*, and so on, other botanists in years past, have failed in making permanent species of.

Under the name of Alpine Strawberries, these forms are well known in Europe. Though there is certainly no grounds for a new species in this case, there is no reason why this breed of the common Strawberry may not be improved; and

though botanically this cannot be regarded as a novelty, it may be an interesting horticultural introduction for all. It may be larger, or sweeter, or more prolific than any monthly Alpines we have had before. About this we can say nothing until we see the fruit.

Some doubt about its hardiness because it comes from Mexico; but it should be remembered that the Strawberry of Europe, *F vesca*, is a native of both Europe and America; and that it is found indigenous all through the mountain ranges of this country, from Canada to Peru. In the course of countless ages it has no doubt emigrated south, and hence its hardy character when brought from there.

GRIDLEY CHERRY.—Of late more attention is paid to the Heart and Bigarreau Cherries than formerly, and of the many varieties fruited by us none are more worthy of especial mention than the Gridley. This variety was at one time grown quite extensively near some of the eastern cities as a market sort, but somehow or other it was placed on the rejected list by the American Pomological Society, since which time it has not, we believe, been propagated at the East, at least to any great extent. The tree is a rapid, upright grower. It maintains a main or vertical stem, from which the branches incline upward at an angle of about three degrees. Thus unaided it forms a broad open head. In this respect it is not excelled by any other variety. Trees, when annually or once in two years subjected to our system of disbudding, produce fruit which (for size) is equalled only by one or two other sorts. Fruit, obtuse, heart shaped; skin deep black; flesh firm, and when fully ripe very sweet, losing the piquant bitter which characterizes this cherry when first colored. Ripens fifth to fifteenth of June, or about eight days after Black Tartarian. —E. S. HULL, *Journal of Agriculture*.

NEW AND RARE PLANTS.

NEW CLEMATISES.—The large Japan Clematises are found to hybridize very well together, and new varieties are becoming very numerous in England. They are truly beautiful, at least those which we have seen, and bid fair to become most popular ornaments for American grounds.

In the collection of Alfred Cope near Philadelphia, we recently saw three varieties in bloom together. These however are some of the direct importation of Mr. Fortune, and not of the improved English varieties, although all of the same race. *Clematis Jackmani* was a very large white, nearly six inches across, and very showy for a white. *C. Fortunii* we have figured in one of our back volumes. This is very large, and has several rows of petals incurved or cupped like a rose. The color is white with a rosy tint. But the loveliest of all in our estimation was *C. Standishii*, which is double the size of our common C. azurea, and of a dazzling purple blue. These three, all blooming together, made a very fine set. There were others, but not yet in flower.

These Clematises will be rather expensive for some years; but in the mean time cultivators should grow the old *Clematis azurea* which is now one of the prettiest of rather common things. By familiarizing themselves with the great beauty of this kind, they will better appreciate the great advance made by these new Japan introductions.

VIBURNUM PLICATUM.—We refer in another paragraph to some beautiful clematises we saw in the collection of Alfred Cope. Another beautiful thing we saw there was the *Viburnum plicatum*, or Japan Snowball. Our common Snowball also a Viburnum, is very interesting, but it is not near as charming as this variety. The flowers are of a very pure paper white, and not mashed into a solid body as in the common form, and the green glossy plaited leaves, and good bushy habit of growth is far superior in this new variety. It will certainly become a very popular nursery plant.

Some of our readers may not know that the Snowball is only a male variety of *Viburnum opulus*. The female plant bears red berries, known as "mock cranberry," and used for tarts; and has small not showy flowers.

VARIEGATED TULIP TREE.—A variety of the Liriodendron has been produced in Europe, which has a beautiful stripe of gold running down through the centre of the leaf. This may prove valuable for our climate; yellow variegations being more hardy than the white, very few of which stand our hot sun without injury.

LILIUM PARTHENYON.—A new Japan Lily under this name is amongst the latest of English novelties. Roots sell at $10 each.

DOMESTIC INTELLIGENCE.

MUSHROOM CULTURE.—The first thing to be done in their cultivation is to secure ample supplies of suitable manure; the best is that from the donkey stables, the next that from mules, and third in value is horse manure; and the last is in more general use because of the scarcity of the former. It should be thrown into heaps, and fermentation induced by frequent watering. In a short time it acquires the necessary qualities, when it becomes short, unctuous, and dark in color, and is fit for use. Cellars and caves are, on account of the equable temperature, the best places in which to form your mushroom beds, particularly when it is designed to grow them each month in the year; but almost any building will do where a temperature between 55 and 60 can be maintained. The beds should be four feet wide, and of any desired length. Ordinary earth is first laid on to a depth of six inches; this is packed firm with the back of the spade, and is then covered with six inches or more of the manure, and this also is packed close with the spade; then the bed is ready to receive the spawn. This can be bought packed, fit for use, in the shape of bricks. These brick of spawn are broken into small bits, and these bits are stuck an inch deep into every three inches space of the surface of the manure; the whole surface is then covered, two inches deep, with fine sifted earth, and this, too, is well packed down with the spade. Then a good sprinkling is given of water heated to 80 or 90 degrees, and within a few days the mushrooms will commence to spring up, and will continue to do so for some months. —*Turf, Field and Farm.*

STRAWBERRIES AND THE CHICAGO MARKET.—Some of the advantages of the Chicago market were made tangible, to shippers at least, on the 24th and 25th of May. It was currently reported that eight hundred bushels of strawberries were received at that point on Monday and Tuesday, the dates named. Until the afternoon of Tuesday, fine berries sold at 25 cents per quart box, but long before sundown, they were hawked about the city at 10 cts. per box.—*Rural World.*

FAILURE OF FRUIT ORCHARDS.—From all quarters we hear of the decay of fruit orchards. The fine apple orchards that were once a pride and profit to their owners, are dying out. Of the choicest kinds of apples there are now but few left. The old Redstreak, the finest cider apple in the world, is rarely now to be met with. The Rambo is sharing a similar fate. The Golden Pippin is becoming scarcer year by year, and so of all the older varieties, there are but few left. The new varieties in Maryland, and to the South of us, do not succeed well, and perish early.

So too of pears. How few are there now of this choice fruit to what there used to be among us, and of those few, how rare it is to find them in perfection. In the Northern and Western States these fruits do better. In the Northern, because the climate is more favorable to the growth of the apple and pear, and because greater attention has been given to their proper cultivation. In the Western, because the fruits are seedlings, and are grown to a great extent on virgin soil.

But the same fate, with us, has attended the plum, which falls almost certainly a victim to the curculio, and to the apricot which rarely matures its fruit. But the most serious circumstance of all is the gradual decline of the peach trees. In respect to climate and soil Maryland, and the States to the South of us are both admirably adapted to the growth of this delicious fruit. Years ago, when the Cromwell and Somerville orchards were in their prime, the quantity of peaches they bore, the quality of the fruit, and the number of years they were in bearing before they showed signs of decadence, were all that could be desired. Even now, seedling peach trees may be found growing in hedge rows and bye-places, which are four times the size of the cultivated tree, and which are hardy, bear profusely, and live to a great age. We know of one still living which dates back full twenty-five years from the seed. The fruit, of course, is not as luscious and juicy as the cultivated peach, but the longevity of such trees, and their constant bearing qualities, are a proof that there are defects in the mode of raising and cultivation the peach which require to be remedied.

Our opinion is, that the decadence both of apple and peach trees, in orchards where they are cultivated for their fruit, is not altogether owing to the exhaustion of the soil of those constituents upon which it thrives; but is largely attributable to the fact that nearly all our orchards are of grafted or budded fruit.—*Maryland Farmer.*

FOREIGN INTELLIGENCE.

CULTURE OF THE CALCEOLARIA.—There are few plants better adapted for an effective display in the greenhouse during the spring months than the herbaceous Calceolaria, and, not being very difficult to cultivate, it is desirable that it should be more extensively grown.

The named varieties are now seldom seen in cultivation. Few Nurserymen's catalogues give a list of them, and fewer still can supply good plants The principal reason, I have no doubt, is that it is not found profitable to cultivate them. Numbers of the plants are lost after the flowering season is over; at that season there are many demands on a gardener's time, and the Calceolarias are placed in some corner, where they are neglected, and soon become a prey to green fly or other insect pest. If it is intended to perpetuate any particular variety, the plants must be attended to as soon as the flowering season is over; the flower stalks are first cut off, then remove the surface soil from the pots, replacing it with fresh material, into which the young shoots can be pegged down, and they will soon strike roots if the plants are kept in a healthy condition. They ought to be placed in a cold frame at this time; and it is well to have the back of the frame turned to the south, as the plants will not require so much artificial shading. When plenty of roots are formed, the young plants may be removed and potted separately, or several plants may be placed together in one pot, according to the size of the specimens required. I have seen named varieties in the hands of good cultivators grown into as fine specimens as seedlings; they require more care, however, and more easily fall into an unhealthy state.

The best method for ordinary purposes is to grow seedlings, as large specimen plants can be obtained from seed in less than twelve months The seed may be either saved at home from the best varieties, which is the surest way to secure a good stock, or by purchasing from a respectable nurseryman. A good time to sow is in June for early flowering, and in the beginning of August for late flowering. The seeds are very small, and a half grown packet does not contain a large quantity of them. They must, therefore, be carefully sown. The best way known to me to do this is to prepare a compost of two parts loam to one of leaf mould, with a liberal proportion of silver sand; then take a clean pot or pan, and put plenty of crocks in it, covering with a litttle moss to prevent the compost from mixing with them. Fill the pot three parts full of the compost, the portion near the surface being pased through a fine seive, sow the seed thinly on an even surface, and cover it lightly with silver sand. A little damp moss must be placed on the surface until the seeds vegetate, when it may be removed I generally place the pot in a shady part of the greenhouse. The young plants will appear above ground in a fortnight or less, when they must be carefully protected from the direct rays of the sun, and sheltered from drying winds; an hour's sunshine will shrivel up the young plants in July or August.

As soon as the young plants can be handled, they ought to be potted singly in 60-sized pots, using the same compost as that described above. The best place for the plants is a position near the glass; they must still be shaded and sheltered from the wind as before; and kept free from green fly. This is the worst enemy of the Calceolaria, and the best method to free the plants from it is to smoke the house with tobacco until the fly is all destroyed. Some cultivators recommend dipping the plants in a solution of an insect-destroying compound, but, whatever system is pursued, the fly must be effectually destroyed, otherwise the plants will do no good.

If the plants are in a healthy state they will soon require shifting into larger pots. At this time one-sixth part of rotted cow manure should be added to the compost, using loam of a turfy nature. They will require to be shifted twice more after this, using for the last shift pots of from 8 to 10 inches in diameter inside measure. In March and April the flower stalks will be growing upwards, and will require to be neatly staked-out, using small sticks about 18 inches long, more or less, according to the appearance of the plants.—J. DOUGLAS, *London Journal of Horticulture.*

ACTION OF FROST ON PLANTS.—We do not think our English friends so clearly perceive why plants die in winter, when the cells are not ruptured by frost, as we do. Still their observations are often suggestive. The following from the *Gardener's Chronicle* is interesting:

"Allow me to supplement your remarks (p. 107) on this subject with a few thoughts which have

arisen from time to time on observing the effects of frost. I think it more likely when a plant is killed by frost, that it is owing to the transformation of the various fluids in the plant—which become perhaps altogether putrid, and are made instead of a supply of life a cause of death—than that the cells or their coatings are injured. Why tender Mosses and other plants resist frost, when plants of a harder texture succumb, even in a higher temperature, will be left unexplained until the properties of the fluids of the various plants are understood. Is it not possible that the sap of the larger organisms contains matter which the smaller ones do not? and that that is the reason of such diversity of results. The extra moisture imbibed in wet seasons is also a help to speedy decomposition. Perhaps the sudden thawing of frosted plants causes a more virulent corruption of the sap. How could the cells of a tree, whose trunk is 8 or 10 inches through, be injured so far down as to kill it, even at its roots? Is not the cause rather in the lodgment of poisonous or putrid sap in the tree, caused by the frost acting on the smaller branches? Again, how is it that plants die down below the point which has been exposed to the action of the frost, if the cause is not in the sap? It cannot be that the cells, or the atoms of which those cells consist, are at all injured, unless injured by the sap. Another question arises: are the properties of the sap always alike all the year round? [Certainly not.] If not, may not that circumstance explain why a plant which survives one frost and thaw, succumb afterwards to a frost of less intensity. Where do the various matters which go to form the plant come from? Are they brought up with the sap? Do they appear altogether, or has each a particular season of its own? When those questions are answered, or even if more information on these matters were forthcoming, we might live in hopes of one day having an explanation of the action of frost on plants. *H. M., Enys, Penryn, February* 4. [No doubt the qualities of the sap are altered by frost, as well as the more solid matter of the cells. The chemical constitution of the sap varies greatly at different seasons, as also its physical qualities.—EDS.]

AMERICAN POTATOES IN ENGLAND.—Our cousins are catching a little of our Potato enthusiasm. Rev. Radycliffe, a noted horticulturist, thus writes to the *Gardener's Chronicle:*

The Potato arrived perfectly fresh. The four sorts sent were the Early Rose, Climax, Breeze's No. 4, and Breeze's Prolific. The Early Rose is quite distinct from any European variety that I have ever seen. It is not the same as my Peach Potato, as suggested in my former article (p. 81). The Peach, the Early Emperor, and Napoleon are the same Potato. In passing I may observe how inconvenient are local names, ending in innumerable synonyms. The Early Rose looks more like the Salmon Kidneys than any other of our varieties, but the eyes (small, like mole's eyes) are fixed on promontories, whereas the Salmon Kidneys have deep eyes, and are not so well formed. It appears to be an early Potato, and I should say a great cropper, sure to be a favorite with poor people, and probably may obtain with the "upper ten.,' It is of a dull rose color; its flesh is white, with a purple streak, which portends quality. More I cannot say at present, but all that I can say conscientiously in its favor after trial I shall be pleased to do. I say the same of the others. I never allow prejudices to have the least ascendency over me. It is unworthy of noble Englishmen to run down "externs" when they are deserving of our praise. Climax is like the former, many-eyed, but deep-eyed, a long round Potato, somewhat yellow in its flesh, and occasionally hollow; it will, at least, make a a good cottager's Potato. Soil makes a great difference in the color of the skins and flesh of Potatoes. Breeze's No. 4: This, so far as appearance goes, is a tuber "to see once, and dream of forever" It is a squarish oblong flattened round, or flattened square with the edges rounded off. The eyes are but little depressed, the skin is white and smooth, and the flesh is white and firm. If the flavor is good it will take the highest place among non kidneys. It obtained a certificate from the Massachusetts Horticultural Society, as did also the next. The tubers have been sold at a fabulous price in the United States. Breeze's Prolific is a most perfect Potato: I think it is one of the best that I ever saw. Its eyes are less depressed than those of the former. I could not find a fault with it, except that, in a friendly way, its skin might be a little whiter. Its flesh is white and firm. It looks like an earlier sort than the former. As far as appearance goes, they do immense credit to America. In a word, I never saw nicer Potatoes. It is difficult to describe the shapes of Potatoes exactly. I should call Prolific an oblong flattened round. Till I see whether the crops of these Potatoes and of those I am about to describe are uniform, I must pause before I can fully praise!

DOUBLE CINERARIAS.—It is not too much to expect a race of double Cinerarias, for these plants are now beginning to show their sportive character. We have met with two examples within the last few days; the first in the hands of Mr. Ford, the able gardener of Grange Wood, Norwood, the residence of C. Hood, Esq., and the other at Mr. Kinghorn's Nursery, Richmond The flowers of the former plant, in the normal condition, are white, with a broad margin of purplish crimson, but the double flowers were so full that the white was completely hid, and the margin only visible. It is not a mere confused mass of petals, but a well-developed flower, equal in size and appearance to a double primula. The double flowers on Mr. Kinghorn's plant are much the same color, but less double, so that the flowers are white prettily tipped with rose. They are all destitute of the organs of reproduction, so that saving seed directly from them is entirely out of the question. The only chance, therefore, of fixing the double flowers lies in seeding the other flowers on the same plant, with the chance of getting one with all, or a larger proportion, of double flowers than either of these have at present. Perhaps offsets from these plants may have a tendency to produce more flowers than the parents; at all events, it is worth a trial; and we are glad that both plants are in the hands of skillful cultivators, who will undoubtedly do their best to perpetuate a race of double-flowered kinds.—*Gardener's Weekly.*

HORTICULTURAL NOTICES.

THE GENESSEE HORTICULTURAL SOCIETY.

Held its spring meeting at Nashville on June, 5th, and we judge was a complete success. The number of the fruits and flowers exhibited were very great, but we have not been furnished with names of many of the kinds exhibited, or we would cheerfully give a detailed report. R. L. Nichols, Esq., was complimented for his beautiful bouquets, Mrs. Dr. Harris for Rustic flower stands, Dr. Fall for Clianthus Dampieri, Truitt & Sons for a donation of plants for decorative purposes, Thos. Garland, Esq., for the excellent growth of his plants, Dr. Cheatham exhibited thirty varieties of well grown Fuchsias. R. L. Nicholson took "premium for the best collection of Rare plants ever exhibited in Nashville."

In Strawberries the first premium for the best variety of Strawberry, was gained by Mr. H. Vaughan with *Wilson's Albany*; the second by W. Heaver with *Charles Downing*. The best market variety was also awarded to Vaughan for *Albany;* second to Heaver for *Charles Downing*. Best new variety to H. Vaughan for *Green Prolific*. Best cherries to P. Vaughan for *May Duke*.

Fred. H. French, Esq., offered a premium for the best single variety of strawberry which was awarded to the *Triomphe de Gand*, of W. Heaver. We suppose there must have been some condition imposed which does not appear in the report, or why should *Albany* be the best in the one case of Vaughan, and the *Triomphe de Gand* in this? Amongst the successful exhibitors were Mrs. Dr. Blackman, Mrs. John Morrow, Leon Geny, Andrew Gregory, Dr. Harris, F. H. French, Mrs. Dr. Blackie, Miss Lizzie Brown, Mrs. Watkins, Mrs. Ingram, James Morrison, Mrs. Heaver, M. B. Torey, Owen Sharkey, W. S. Gray, H. L. Norvell, Wilson and Crocker; and the following ladies are complimented for their services as the committee of arrangements: Mrs. Henry Ewing, Miss Avery, Mrs. Hillman, Mrs. A. F. Goff, Mrs. E. S. Gardener, Miss Laura Gardener, Mrs. J. C Warner, Mrs. C. A. R. Parsons, Mrs. Dr. Waters, Mrs. John Overton, Mrs. C. H. Campbell, Miss Erie Murford, Mrs. F. H. French, Mrs. Dr. Harris, Mrs. H, G. Scovel, Mrs. Heaver, Mrs. St. Clair Morgan and Mrs. W. E. Watkins.

OHIO GRAPE GROWERS' ASSOCIATION.

The Summer Meeting and Excursion of this Association will be held at Lancaster and the State Reform Farm, on the 25th and 26th of August next. There are a number of good bearing vineyards in that vicinity, and many more coming on, and the people feel much interest in fruit culture generally. It is also a beautiful and interesting section of the State, and the citizens, including the Hocking Valley Horticultural Society and the officers of the Reform Farm, promise to co-operate in making the occasion agreeable to visitors.

The *ad-interim* Committee of the State Horticultural Society will attend the meeting, and the local Horticultural Society will hold an exhibition at the time, if the season is at all favorable for fruit. The railroads will doubtless grant return passes to visitors, and a large attendance may be anticipated.

The Annual Exhibition of the Grape Growers Association is to be held in Cleveland about the middle of October.

The Knox Grape Show will be held on Wednesday, the 6th of October.

The Ohio State Fair will be held at Toledo, September 14th to 17th. The Horticultural Department will be in charge of D. C. Richmond, of Sandusky, a member of the State Horticultural Committee. Liberal premiums are offered for all kinds of horticultural products, and a very large display of fruits, &c. may be expected.

CIRCULAR OF THE AMERICAN POMOLOGICAL SOCIETY.

Whereas, the American Pomological Society, at its last meeting, accepted the invitation of the Pennsylvania Horticultural Society to hold its next session in the city of Philadelphia; and whereas, the latter institution has generously proffered accommodations for us in its elegant, new and spacious hall; therefore, the undersigned hereby give notice that the Twelfth Session of the American Pomological Society will be held in Horticultural Hall, Philadelphia, Pa., on the fifteenth day of September, 1869, commencing at 11 o'clock, A. M., and continuing for three days.

The present session promises to be one of the most auspicious, in point of numbers, intelligence, and importance, which the Society has held. From all parts of the country, assurances are given of cordial co-operation and aid. Delegations have already been appointed from several States, among which we may name Kansas, whose Legislature has nobly appropriated five hundred dollars to defray the expenses of her representatives. The Exhibition of the Pennsylvania Horticultural Society will also take place at the same time, which will add further interest to the occasion.

All Horticultural, Pomological, Agricultural, and other kindred institutions in the United States and British Provinces, are invited to send delegations, as large as they may deem expedient; and all other persons interested in the cultivation of fruits are invited to be present and take seats in the Convention.

And now that our Southern brethren, after a painful separation of years, are again united with us in full fellowship and communion, we invite all the States and Territories to be present, by delegation, that the amicable and social relations which have heretofore existed between our members throughout the Union may be fostered and perpetuated, and the result of our deliberations, so beneficial to the country at large, be generally and widely diffused.

Among the prominent subjects which will come before the Society at this session, will be that of the further revision of the Society's Catalogue of Fruits. For the purpose of aiding in this most desirable object, an *ad-interim* meeting of the Officers and Fruit Committees was held in the city of New York, on the 10th day of February last, the result of which will be made known at this time. The special Committee appointed for this purpose are now, with the various State and local Committees, actively engaged in collecting such information as will aid in determining what varieties are best adapted to the different sections and districts of our country; and this information, in the form of reports, will also be submitted to the action of the Convention. The several State Pomological and Horticultural Associations are requested to compile lists for their own States or Districts, and forward them, at as early day as possible, to P. Barry, of Rochester, N. Y., Chairman of the Committee on the revision of the Catalogue.

Members and delegates are requested to contribute specimens of the fruits of their respective districts, and to communicate in regard to them whatever may aid in promoting the objects of the Society and the science of American Pomology.

Each contributor is requested to come prepared with a complete list of his collection, and to present the same with his fruits, that a report of all the varieties entered may be submitted to the meeting as soon as practicable.

All persons desirous of becoming members can remit the admission fee to Thomas P. James, Esq., Treasurer, Philadelphia, who will furnish them with Transactions of the Society. Life Membership, Ten Dollars; Biennial, Two Dollars.

Packages of fruit, with the name of the contributor, may be addressed as follows: "American Pomological Society, care of Thomas A. Andrews, Horticultural Hall, Philadelphia, Pa."

Arrangements have been made with several Hotels in Philadelphia for a reduction in price of board. Similar negotiations with the various Railroad Corporations are also in progress, and of which due notice will be given.

MARSHALL P. WILDER, *Pres't.*, Boston, Mass.
F. P. ELLIOT, *Sec'y.*, Cleveland, O.

The Gardener's Monthly.

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HINTS FOR AUGUST.

FLOWER GARDEN AND PLEASURE GROUND.

Annually as the seasons roll around are we impressed with the great fact which we have been for years urging on the American public, that the European styles of gardening so commonly adopted in America, in our best places are altogether wrong. True art was made to minister to man's wants, not that man should be made to serve it; yet our best specimens of Landscape gardening make it a divinity, and human nature a sacrifice offered up to it. Recently we visited a tract whereon money had been lavished with an unsparing hand to make it beautiful. The walks are measured by miles; and we walked with the proprietor some hours through the grounds. Except that the curves of the road and the surface contour, or the size of the trees and shrubs were not *exactly* the same, we are not conscious that we imbibed one new fact, or had one new idea inspired by that weary walk that we did not receive during the first few moments there. We are quite sure that we should have derived more pleasure from a few hours stroll through some wild wood than we could ever get from such weary wanderings under a sultry sun, no matter how *magnificent* such "art" might be deemed.

We have before said in these pages that for a month or two in spring, when all nature is gushing forth joyously into life, we are content to look on and enjoy the wondrous sights; and when, in fall, the whole universe sparkles in autumnal tints, we gaze on the splendid pageant passing away without a selfish thought; but broiling, sweltering, roasting under our August suns, we feel that our garden art must do something more for us than show us beautiful sights like these.

We have learned to protect ourselves from cold wintry winds, but the art of making a place cool in summer is yet in its infancy. There is nothing accomplishes this better than *plenty of grass*, and the neat deciduous tree foliage. The making of flower beds with box edgings and gravel walks suits Dutch and French gardening, but it is too hot for us.

The beds should be cut in grass. The walks round about a place should also be in grass as much as possible; only those likely to be frequently used should be gravel walks. Even these, where turf can be obtained, are much cooler when this material can be used, than when gravelled. In the planting of roads art, as we read it in the books, plants only in corners, and makes its most striking effects to be seen from the drives; but American art as it should be, plants all the chief drives with deciduous shade trees, and yet allows you to look through beneath them to the beauties beyond.

The best kinds of deciduous trees for this purpose are the Silver, Sugar, Sycamore, and Norway Maples; American, and where the borer is not troublesome, the English Linden; American and European Ash, Horse Chestnut, Magnolia tripetela and acuminata, with its first cousin the Tulip tree; the sweet Gums, Elms, Kentucky Coffee and Oaks of all kinds. For farm roads the Cherry, Black, English and White Walnuts Chestnuts, and even the Pear may be employed. Besides these in the South there are the Mimosa, the Melia Zederack, Magnolia grandiflora,

which though an evergreen, has the lightness of a deciduous tree; besides Live Oaks, &c.

But besides the selection of trees for drives, weeping trees should be liberally introduced, some of which like Weeping ashes, make cool and shady arbors preferable to any the carpenter's hand could make. Of these are the large varieties of Weeping Willow, Weeping Sophora, Weeping Birch, Lindens, Elms, &c., though none equal the Ash for arbor purposes.

Then again very much may be done by planting two or three trees together so that as they grow up, they will form natural seat backs. For this purpose there is nothing like the Oak tribe.

Sometimes we cannot get the coveted shade because we have planted slow growing trees—generally the prettiest and best worth waiting for,—this may be effected by planting liberally of Alders, Poplars and similar ephemeral trees, to be cut away as they gradually interfere with the permanent kinds.

The planting season will soon come around, and now is the time to look about and select the desirable kinds, and to decide on the proper places to set them.

The latter end of August is one of the best seasons of the year to transplant evergreens. The young growth of the past season has got pretty well hardened, so as to permit of but very little evaporation,—and the earth being warm, new roots push with great rapidity, and the tree becomes established in the ground before cool autumn winds begin. The chief difficulty is that the soil is usually very dry, which prevents much speed with the operation; and the weather being usually very warm, the trees have to be set again in the ground almost as fast as they are taken up; so that it is not safe to bring them from a distance. It is as well, therefore, to make all ready in anticipation of a rain, when no time may be lost in having the work pushed through. Should a spell of dry weather ensue,—which in September and October is very likely,—one good watering should be given, sufficient to soak well through the soil and well about the roots. A basin should be made to keep the water from running away from the spot, and to assist its soaking in. After being well watered, the loose soil, should be drawn in lightly over the watered soil, which will then aid in preventing the water from drying out soon again.

As soon in the fall as bulbs can be obtained, they should be planted—though this will not generally be the case till October,—but it is as well to bear in mind that the earlier they are planted, the finer they will flower.

Towards the end of the month, and in September, evergreen hedges should receive their last pruning till the next summer. Last spring, and in the summer, when a strong growth required it, the hedge has been severely pruned towards the apex of the cone-like form in which it has been trained, and the base has been suffered to grow any way it pleases. Now that, in turn, has come under the shears, so far as to get it into regular shape and form. It will not be forgotten that to be very successful with evergreen hedges, they ought to have a growth at the base of at least four feet in diameter.

FRUIT GARDEN.

In our last number the Editor gave his views on fall planting strawberries, and reasons why in some cases the practice is to be commended. When it is to be done, the ground will have to be prepared about the end of this month.

After a piece of ground is dug at this season for Strawberries, roll it well with the garden roller. When ready to plant make holes with a dibble, fill the holes with water, and when it soaks away, put your plant which has been kept in water to prevent wilting. *But*, in putting in the plant do not plant too deep. "Too deep" kills 99 hundredths of all the Strawberries that die in the year from transplanting. "Too deep" is when any thing but the small fibres are buried under the surface.

In the story books we sometimes see pretty pictures showing how Strawberry roots are to be "spread all around nice." A little cone is made in the middle, the plant set on the apex, and the roots running like mountain streams down the cone on every side. This is a very pretty plan, but will give us no more Strawberries. There is little romance in a Strawberry fibre. They push out, pump water into the plant for a few months and then die. No Strawberry root lasts twelve months. New ones push and old ones die daily.

All thing considered, for an amateur garden the best plan is to set the plants in line six inches apart, the rows eighteen inches apart, and every fourth row omitted, as it were, to form an alley-way between the beds; on this plan, as the plants grow, they can either have their runners cut off, or they may be allowed to go together in bed

form, according to the kinds grown or views of the grower.

The Grape-vine at this season will require attention, to see that the leaves are all retained healthy till thoroughly ripened. It is not a sign of healthiness for a vine to grow late; on the contrary, such late growth generally gets killed in the winter,—but the leaves should all stay on, to insure the greatest health of the vine, until the frost comes, when they should all be so mature as to fall together. Frequent heavy syringings are amongst the best ways to keep off insects from out-door Grapes, and so protect the foliage from their ravages.

Many kinds of fruit trees that have arrived at a bearing age, may perhaps be growing very vigorously and producing very little or no fruit. Those who have read our remarks in past numbers will understand that whatever checks the wood-producing principle, tends to throw the the plant into a bearing state. For this purpose, summer pruning is often employed, which, by checking the most vigorous shoots, weakens the whole plant, and throws it into a fruitful condition. The same result is obtained by root-pruning, with this difference, that by the last operation the whole of the branches are proportionately checked,—while by pinching only the strong-growing shoots, the weak ones gain at the expense of the stronger ones. Presuming that the branches have been brought into a satisfactory condition in this respect, root-pruning may now, this month, be resorted to. We cannot say exactly how far from the trunk the roots may be operated on, so much depends on the age and vigor of the tree. In a luxuriant, healthy tree, one-fourth may be safely dispensed with. In a four year old standard Pear tree, for instance, the roots will perhaps have reached 4 feet from the trunk on every side. A circle six feet in diameter may then be cut around the stem, extending two feet beneath the surface. It is not necessary to dig out the soil to accomplish the result; a post spade, or strong spade of any kind, may be driven down vigorously, describing the circle, and doing the work very effectually. Of all trees, the Peach is as much benefited by root-pruning as any.

VEGETABLE GARDEN.

As soon as your vegetable crops are past kitchen use, clear them out. Never suffer them to seed. In the first place, a seed crop exhausts the soil more than two crops taken off in an eatable condition; in the next place, the refuse of of the kitchen is likely to produce degenerate stocks. Good seed saving is a special art by itself, always claiming the earliest and best to ensure a perfect stock.

Celery will require earthing up as it grows, to get it to blanch well. It is not well, however, to commence too early, as earthing up tends, in a slight degree, to weaken the growth of the plants. Take care, also, not to let the soil get into the heart in earthing, or the crown is apt to rot.

As fast as Endive is desired for Salad it should be blanched. Matting thrown over is the best for this purpose, as the plants are not so liable to rot as when pots or boards are employed.

In cold or mountainous regions, Melons are hastened in the ripening process, and improved in flavor, by a piece of tile being placed under the fruit.

Keep weeds from your compost heaps, as they exhaust the soil, and bear seeds for future brow-sweatings.

Sow Lettuce for Fall crop, thinly, and in deep and very rich ground.

Early Valentine Beans may still be sown early in the month,—the soil for a late crop should be well trenched, or, if the Fall be dry, they will be stringy and tough.

Cucumbers, Squash, and other similar plants, often suffer from drought at this season. Cold water does not help them much, but a mulching of half-rotten leaves strengthens them considerably.

Cut down straggling herbs, and they will make new heads for next season.

Towards the end of the month, a sowing of Spinach may be made in rich soil, which will come in for use before Winter. That desired for Winter and early Spring use, is usually sown in September in this region. A few Turnips may also be sown for an early crop, but will be hot and stringy unless the soil is very rich.

Corn Salad is often sowed at the end of this month. It does not do so well in damp soil or low situation.

HOT AND GREENHOUSE

Many kinds of greenhouse plants, as Oranges, Lemons, Camellias, etc., may be inarched or budded at this season. The process of inarching is simple, and consists merely in bringing the shoots of two different plants together. The

bark is very lightly shaved for half an inch or more on each shoot, which are then both tied together, and in about two months the union may be examined, and if found sufficiently strong, the scion may be separated, and suffered to go for better or for worse with the stock you have selected for its helpmate through life.

Preparations must now be made with a view to stocking the houses for next Winter and Spring's use. Geraniums of all kinds may now be readily struck. A frame in a shady place, set on some light sandy soil in the open air, affords one of the best places possible for striking all kinds of half-ripened wood. A partial shade is at all times best for cuttings at the start, though the sooner they can be made to accustom themselves safely to the full light, the better they usually do.

Seed of many things may also be sown for Winter and Spring blooming, particularly Cineraria, Calceolaria, Pansy, Daisy, Chinese Primrose and some of the Annuals Great care is necessary with the Calceolaria; the seed is so small, that it rebels at the smallest covering of soil. The best way is to sow it on the surface, water well, and then cover with a pane of glass until fairly germinated; this prevent evaporation and consequent drying of the seed. Almost all kinds of seeds germinate most readily in partial shade; but as soon as possible after germination, they should be inured to as much light as they will bear.

Many plants, as Begonias, Gloxinias, etc., can be raised from leaves. Cut the leaf off down to near its junction with the parent stem; insert it down to near the blade of the leaf in pots of well-drained light sandy soil; peg the blade of the leaf down on the surface of the soil, and set the pot in a shady place,—if with a little bottom heat, all the better.

COMMUNICATIONS.

PURSH'S JOURNAL.

(*Concluded*)

5. Gleens falls are very interesting to see them: I detained myself for about two hours here, to see if I could not find something new on the rocks, but was disappointed. The Juniperus communis or else a variety of it grows on the rocks, below the falls. I got exceeding week & tired & seeing a chance of riding in a wagon to Fort Ann, I took it; I arrived there at night fall.

6. Rested myself at Fort Ann. Potamogeton gramineum & natans—Humulus Lupulus—a species of Carduus with small flowers & very spinous leaves, calld here Canada thistle, beginns here. It was quit new to me.

7. From Fort Ann the road leads chiefly along the banks of Wood creek--with rocky shores of indurated clay & lime stone: high hills in sight on all sides—soil very stony & appearantly poor. At Skeansborough, which is the head of lake Champlain I made a short stay to examine the meadows & banks of the lake–Lilium superb–Iris virginiana—-Sagittaria—-Mimulus—-Viburnum nudum—-Lentago—-Cephalanthus & some more common plants mentioned in other places—I arrived at Fairhaven at night.

8. The white pine is here the chief timber; I observed here in the woods a species of Willow new to me. All this day I travelled through cultivated lands, on the side of the mountains, when I came near to Ruttland I passed the Ira mountain which appears to be a very interesting spot, & though necessity forced me to go on, I was determined to return to it some other day to ascend it The timber is here chiefly Hemlock—Pine- Spruce- Beech-Poplar-Sugar Maple &c—no Oak. Arrived at night at Ruttland having travelled all day in the rain & fatigued myself to the utmost.

Sept. 9. After enquiring in the Post office for letters for me & finding none, I took a small walk about the town. Observed nothing new to me, the road sides are covered with Canada thistle & Verbena hastata. It having not quit ceased raining, besides my not feeling very well, after getting so very wett yesterday I was obliged to keep the house & rest myself; Killington peak which is said to be the highest part of Vermont, is in sight of the town & makes a respectable figur. I wrote a letter to Dr B. as I am destitute of cloathes & the weather beginning to get very raw & cold I will not be able to stay long here unless I get means of buying cloathes fitt for the season

10. It clearing off very fine but the air very cold; a very bad cold makes me afraid of having a relapse of Influenza, I felt so ill. that I kept the house most all day

11. Feeling somewhat better, I dryed how a good exercise on the mountains might agree with me; I set out after breakfast, the foot of the mountains beginns about 2. m. from the town. In a Hemlock swamp I found the Cypripedium canadense or spectabile, Orchis bifolia,? Nephrodium Dryopteris, Vaccinum hispidulum. This plant had beautiful white berries like wax work. I dont know whether this plant allways bears white berries or not as I am but little acquainted with it. Most all the plants & shrubs mentioned on Pokono mountain & the beach-woods grow here. In ascending the mountain I found Epilobium angustifol. in flower & seed—Aster surculosus which I observed last season on Salt Pond mountain grows in plenty here. Aster flexuosus &c & several species of Solidago. among which the principal sort is S. canadensis I ascended a very high ridge. near which one of the peaks is, but feeling week & to much in apprehension of being obliged to stay out all night if I should attempt to ascent it. I deferred it to an other day, when I might be better in health & more provided with cloathes to stand the cold weather over night I took my route over the ridge & went a north course along the side of the mountain, for about 6 m crossing a number of wild mountain creks & brooks seemingly very interesting for plants, but the season is to late every thing wor h notice has decayed & disappeared allready, & the few plants I took notice of I had seen in abundance before. I arrived out of the woods in a road which leeds over the mountains & took up my lodging the first tavern I came to.

12. Returned to Ruttland again I had collected yesterday a very singular species of Equisetum, which appears new The Medeola virginica has here allways a red centre, which Mr Lyon took for a remarkable variety, but I believe it is always the case. when the berries are ripe. Along the main street of Ruttland I found a species of Artemisia.

13 Rested myself, very unwell all day.

14. The morning very cold: I took an excursion to Meets falls. Hamamelis in plenty & beginning to flower. I observed all the flowers to be hermaphrotides. Quercus alba in a dwarfish state: Oak timber is very scarce to be seen here abouts; Viola debilis in flower; Ilex canadensis —A species of Prunus like P. acuminata, &c. I returned to Ruttland very ill disposed; cold & without cloathes & money & no letters arrived made me more sick, than I actually would have been.

15 My illness turned out into a fever & bloody flux which alarmed me very much in the present situation.

16 Very cold night & morning, Killington peak was covered with snow; which stood all day, though the sun came out for several hours.

17. By using several medicines I got so much better of the flux that I took a walk, I chewed most all day the tops of the branches of Spruce, which seemed to do good to me: Populus candicans & balsamifera are planted in the streets of Ruttland, & grow about here frequent. I observed the Verbena hastata to be a truly didynamous & tetrandous plant. Got somewhat warmer to day.

18 Took an excursion towards the mountain. Aralia hispida in berries—Ilex canadensis—Orobanche virginica. Observed Aster infirmus—Circæa alpina. Xylosteum tartaricum—Gentiana saponaria Aralia racemosa &c.

19. Staid in the house, worn down with sickness & vexation of mind about not receiving any support whatever.

20. However disappointed I had been in former excursions I wished to ascend one of the highest peaks in this part, I went about 7. m. from here to one, which is calld Pico. Arrived there in the afternoon & spent the rest of the day on the foot of the peak, to ascend early in the morning.

21. With a great deal of fatigue I ascended the peak, the morning very cold & damp. Observed nothing new; the Hemlock & Spruce towards the top of a is cripply growth being depressed by heavy snows & cold air & very difficult to come through. My expectations being not answered I soon descended & returned to Ruttland.

22. Seeing no other means of getting away from here, than to contrive some way to get money to go on with, & pay my reckoning here, I with great reluctance sold my fowling piece this day; God knows whether the money will be enough to bring me on but I must rough it through as well as I can.

23. This night I received at last & almost to late a letter; my mind has been made up to return as quick as possible to Philadelphia & I will do it now, the letter notwithstanding.

24 Left Rutland.

25. Through Timouth to Battonkill.

26. Arrived at Troy.

27. From Troy to Albany & Baltimore a small landing place.

28. Come to Cattskill

29 When I came to Kingstown I took stage to New York being to much tired to go on longer on foot.

30 On the road to New York.

Octb. 1. Arrived at New York.

2 Rain

3. Seen the houses of the Botanick garden at New York

4. Left New York with the Packet.

5 Arrived at Philadelphia wharf after 12 o'clock, in the night & staid on board untill the 6. when I went ashore.

THE PALACES OF AMERICA.

BY FRANK J. SCOTT.

The traveled reader will be likely to smile mockingly at the above phrase, and wonder what structures America boasts, which the writer has the ignorance, or the patriotic bravado, to name palaces. "Palaces of America!" echoes some stern republican, who has not traveled widely. "We have none, and want none: let effete old nations boast their ruins and their palaces; but what do we want of palaces?" Good man, we want a great deal of them: we cannot get along without them. If you learn to read, you cannot be content without books and newspapers. If you have a soul and ear and voice for music, you must have music; and you will make music, or buy music; and you will build palaces for music. If you receive a thrill of pleasure from the sight of the simplest or the noblest forms of architectural art, is it a sin to try to be thrilled again? Is there any pure pleasure the Creator has given men power to realize which they should not seek to realize? "Order is heaven's first law." Symmetry is the rhythm of order; and Madame de Stael exquisitely characterizes architecture as *frozen music*.

Already our young nation, just free from its first rude labor in subduing rocks, forests, and prairie sod, has more beautiful little dwellings than any country in the world. Already its commercial houses are unsurpassed in beauty as well as number; and its metropolitan hotels have been models for imitation in older and richer countries. *But in public buildings, our cities are too poor to suggest even comparison with those of the old world.* Our parks for the dead—Greenwood, Mount Auburn, Laurel Hill, Spring Grove, and their thousand lesser imitations—are unsurpassed in the refinement of their adornments to mark affection for departed friends; but where are the parks for the living? It is only now that metropolis New York, after postponing for a hundred years her duty to herself and the new world; after smothering in barbarous doubts whether God's vegetable beauties were so needed that every citizen's eye should own a part of them,—has, at last, grandly and generously opened that glorious new leaf of landscape art called "The Central Park" She has thus made noble atonement for past supineness. Strange, is it not, that Mount Auburn and Laurel Hill and Greenwood—homes for the dead, and peaceful, silent walks for the living who mourn the dead—should have preceded in existence the glorious park resorts of the living millions of souls and eyes in the great cities!

Private wealth may command private parks and miniature palaces, galleries of art museums,—the more the better. Each tasteful ground and artistic mansion that wealth moulds no matter how selfishly, is, to the public, a little school of art, inspiring us with higher wants and more beautiful ambitions. But God has planted in us a powerful love of exclusive possession Each one of us insists on a home of his own; and, in the secret longing of the heart, every man, woman, and child of us wants a palace Under no government has this desire so full scope and possibility of realization as under our own. The beneficent nature of the desire is evidenced by some of its results; viz., the remarkable diffusion of physical and mental comforts in this country. But all men cannot be what we call rich, and have beautiful gardens and houses (not to mention palaces), though those who have them not may be just as appreciative of them as the possessors. How, then shall all the poor, as well as all the rich, feed this hunger of their natures? The answer is, By community possession. When we look on the national flag, our symbol of national protection and unity, who so poor that he does not love it as his own? Our country is *my* country; our flag is *my* flag; our vast new capitol at Washington is *ours*,—as if each one of us were the most prominent member of the firm of owners. The pride of possession is not less sweet to cultivated minds because a million other hearts beat with the same emotion over a common property. That sentiment is the vital blood of patriotism. Let us carry this national pride of possession into new fields, and see if we cannot rear

palaces with it more numerous, and some of them more vast and beautiful, than the world has yet seen.

What common want have the American people which all feel, and to which all property must contribute? Is it not EDUCATION? Can we not make our city high schools our palaces, so that no citizen shall be so poor that he and his wife and children may not have a palace that they can feel to be "our palace;" and none so rich as to be able to vie in private splendor with the completeness of the people's palace?

It is a trite remark, and ought to be, that the one thing essential above all others in a free country is free and universal education; yet but few years have passed since our bald and dingy little school houses stood beside our comely churches in the shabby garb of poor relations. Boys used to leave them as if they were crawling out of a hole; shaking the dust from their feet and their minds, as though the great world outside was filled with purer air and better employments. Now, rooms that we call noble, only in contrast with meanness of those our boyhood saw; and verdant grounds around them which we call we call beautiful, because we do not yet know how beautiful verdant grounds may be; and massive piles of educational buildings that dominate churches, court-houses, and council-rooms in some of our small cities,—begin, merely begin, to glorify education, and to attract the eye, and to win the heart to the love of knowledge through the beauty of its surroundings. It is not orthography, arithmetic, and grammar, nor literature and the sciences added, by which the common mind is formed in all our schools Floors which must not be soiled; benches which must not be cut; trees and grass and flowers which wave and smile on every hand, but not to be despoiled; teachers whose language is kindly, and whose manners winning.—these are the studies which are not studied, but are breathed into our natures as the days and years of school life are passed among them They purify and strengthen the better part of the mind, and shame back to their recesses the baser impulses. They act like the pure mountain air that drives from our systems the low land malarias, and contrast with the dirt, tyranny, and vulgarity of the old-time scool-houses as New-England village homes with Irish hovels.

Our educational buildings have improved just enough to show, speaking figuratively, the widening prospect that opens to the view as we emerge from a valley, and begin the ascent of a prospect hill; but it is a step only which we have yet made towards the summit.

What needs yet be done to improve our high schools? The answer is, Everything. First, they must in all things be made more comfortable and more attractive than the average of our homes: this will raise the average standard of comfort and taste. Their teachers must be models of gentle manners and high intelligence. If, in our own community, there be a man or woman of marked superiority of manners and mind, engage, if possible, that person to teach; out-bid all ordinary inducements in other professions, and pay him or her as you would expect to pay for the services of a distinguished leader of a profession. Make all the higher educational buildings models of architectural beauty and adaptedness, and fill them year by year with inexpensive but truthful works of art. The admirable taste and culture shown by the works of the New-York Central-Park Commissioners, joined to their most skillful economy in the pecuniary management of every department of park expenditure, show that it is not impossible to find gentlemen who will handle the public money for the public good. The school funds, whether of great or small cities, should be in such care.

The high schools of our large cities must grow by accretion, into vast metropolitan universities. Their libraries and reading-rooms must be the largest and best ordered in the city,—not merely for the use of young students but free for all citizens during life.—so that library associations shall not need be organized and mantained by private assesments on their members when the public-school funds can provide greater and better libraries at less expense; so that lecture associations shall not need to speculate with popular reputations by charging the public for halls and entrance fees, when the lecture system can be vastly more complete, and continuously useful, under the administration of talented and paid representatives of education, in the halls that the common-scool fund should provide. Why should library and lecture associations in our large cities levy contributions to support a dozen different rooms, and sets of officers, and other expenses, when all their work can be done on a grander scale, more thoroughly, and yet more cheaply, out of the equalized taxation of the entire wealth of the community? Why should the donations of good men of wealth, who

leave ample legacies to be devoted to some educational purpose, be half spent by paid executors in buying real estate, and building isolated structures to hold the remainders of the gifts when the public grounds of the city, and its own educational buildings, should be reared and opened wide to receive and gratefully commemorate such legacies? Why should a great rich people depend on little corporations of artists and art patrons, or on mirror stores and other places for the sale of elegant merchandise for their galleries of art, when the same materials, aggregated in the permanent halls of free city universities would grow year by year and century by century into galleries like those of the Louvre? Not slowly either; but with such interest as all people take in their children so soon as the halls of the schools become established as nuclei of art-works, they would be zealous to fill them All the motives that make us proud of our children our town, and our country, and emulous of superiority, would hasten the result; for our ideal city university is not to be devoted to the boys and girls any more than the Central Park to the exclusive use of children It is to be the club-house* of all the people, of every age and the condition from child to gray grandsire. Gymnasiums have everywhere become a part of our schools. All citizens, old as well as young, should have free use of them at all times. Great pleasure-grounds must be provided for all the athletic sports of men and graceful games for women as well as for youth; but these may be only a part of the beautiful parks which should stretch around the people's palace, vast in proportion to the number of owners they represent

All the great attractions of parks should be a part of the school system. Arboretums botanical gardens, zoological gardens, models for home shrubberies and parterres, play-grounds, skating rinks, and boating waters, all belong to our free university system in the great cities, and must be a part of its surroundings. Libraries, reading rooms, gymnasiums, chemical laboratories, lecture halls, music rooms, museums of architecture, of sculpture and painting, of machinery, of natural history, and all the sciences must be its interior attractions. The individual donations that in times past have founded isolated establishments for one or another branch of education, or added to the meagre funds of ancient colleges, should be attracted to the high schools of our cities, until with the common wealth of all the people, and the donations of private munificence, they shall become the *palaces of America*,—magnificent in architecture and in the midst of parks and gardens which no private wealth however ambitious or ostentatious, can have power to rival. The palaces of the Alhambra and the Louvre, the towers and spires of Gothic art, the domes of the Orient, and the gleaming minarets of India, all are but studies for the possible development of the palaces of education in America Within a century there will be a hundred cities in our country each of which may own palaces and parks equal to any now in existence; and the greatest of these cities may produce masses of architecture as vast as the Coliseum of Rome, and as beautiful as the mausoleum of the Taje Mahal in India This is no unrealizable dream; but a consummation as easy, when once the public spirit of the country becomes directed towards it, as the construction of the vast network of railroads already in operation Its realization should be as natural and certain under our form of government as the periodical duplications of population and wealth. The dingy piles of old brick, around which cluster the pleasmemories and the glories of Harvard and Yale, will, like the deserted inns on old stage coach roads, but serve to mark the rudeness and narrowness of the first steps in educational progress. Already our improved city high schools have absorbed and completely assimilated the old-style "preparatory academies" The old colleges will be as completely superseded, or digested into the new system of free universities, within the next fifty years, *unless adopted and supported by the public funds of the state or city in which they are located.*

The great donation of public lands made a few years since by Congress to the several States for the purpose of founding agricultural colleges, may be used as a basis for state universities on a noble scale,—such as the Cornell University of Ithaca, N. Y, seems likely to grow into. But even this fund would prove inadequate to perfect anything more than the specific department of education for which it was donated, unless supplemented by a fund derived from annual taxation for that purpose. Individual donations, however generous or useful, should never be relied on to do what it is the first duty of all the people to do for themselves. The levy of a mill on a dollar in each state for the support of one grand state university would be a tax almost unfelt by individuals; and yet, with the rapidly increasing wealth of the country, it would soon produce vast sums to build up, year by year the several deparments of our ideal free universities In the great cities the developement of their high schools into such universities seems too natural a result not to be inevitable.

A dozen years ago, the great city of New York, numbering then less than a million people, was aroused to the desire for a park. If it had been known beforehand that the consummation of that desire would cost the city, within a few years, more than five million dollars there would have been a rage of economical indignation against the extravagance of the project Now, the land which it covers has alone cost $5,185,299; and the succeeding expenses of construction, up to December 30, 1867, make a total expenditure of $10,214,000, exclusive of the cost of its maintenance. This is at the rate of a million dollars a year; but most of the amount was expended during the first five years after 1857. The eleventh annual report of the park commissioners shows a steady annual decrease in the cost of construction and maintenance; the the total amount expended for both objects being less than $450 000 during the year 1867, of which about $240,000 represents the net cost of maintenance Is New York poorer or richer for the expenditure? Everybody knows that she is vastly richer; that this same expenditure has all been within herself, and for herself, and has drawn to her other wealth which otherwise would have been attracted to New York. Let us suppose that her park commissioners and the school commissioners shall join hands in the great work we have been suggesting; and that a free palace university be projected to form the central figure and crowning glory of that park The people of New York, who own the park should insist on having their palace there. Let cheaper acres be provided for the water of the old square reservoir, and make its walls the terrace boundaries of the new palace. Would the city feel the burden? No. A million dollars taken out of one of her pockets, for such a work, is a million returned to the other. It is only taken out of a dirty pocket to put into a clean one. In twenty years the same million dollars could be paid over again twenty times, and structures reared costing twenty million dollars. Within the lives of men now middle-aged, our leading city, with such tasteful genius as that of Architect Vaux to direct the expenditure, might furnish its citizens with a palace as beautiful as any the world now boasts; and within a hundred years it ought to exceed in beauty and extent any previous architecture. Smaller cities and villages would quickly follow, each in proportion to its means, the example of the great ones; so that our high schools everywhere, in the course of another generation, may become the most cherished and the most beautiful as well as the most useful of all public monuments.

What a strange blindness have we been guilty of, to erect our most costly structures to cover the desks of our municipal officers and county servants and a few judges and lawyers and litigants,—buildings called city halls and court-houses,—while neglecting to provide ourselves and our children, or even our students, inventors, poets, and artists, with public rooms! We have built attempts at palaces for our commonest servants before providing any for ourselves, or for our intellectual benefactors who are not servants! There is scarcely a city of fifty thousand people in the United States whose citizens have a structure worthy their pride, that they can call truly their own, to use and enjoy: but they can point you to a fine church here, a court-house there, or a new city hall, or a big hotel, or an ambitious opera-house; never to such an educational palace for the daily use of themselves and their children as should dominate all other structures, and form the highest pride of every community.

The city republic of Venice, having in her palmiest days about the present population of Boston, has for centuries been famous for her palaces. Are an equal number of American citizens, who may concentrate all their public spirit in the arts in rearing free palaces of education, less able than the Venetians to effect these spendid results? Quite the contrary. A population intelligent and energetic beyond any that has before existed, inhabiting half a continent, fitted for the sustenance of the densest population, and an illimitable accumulation of wealth, must in the very nature of things become more powerful for the production of grand works of art than any race or nation that have preceded them.

The question brought home to us, in the in-

*We beg pardon for demeaning our people's palace by seeming to assimilate it to those little, narrow-based substitutes for it called club-houses; but the word conveys certain idea of a common place of meeting for comforts and pleasures out of the family circle, and is introduced for that reason.

fancy of our power, is this: What direction shall our public spirit and ambition take?

Is there anything upon which the popular heart and our common treasures may be poured, that is so noble, so universal in its benefits, and so magnificent in its possible results, as these educational parks and palaces?

I scout the idea that there is anything in a republican form of government that requires us to be simple in our tastes, or moderate in our public expenditures. Civilization is but the multiplication of wants, and the stimulus of intelligence to gratify them. The perfection of high culture is to make all things in nature and art our private property by the gift of appreciation. The summit level of democratic republicanism is to place all that is comfortable, all that is useful, all that is beautiful and inspiring within the reach of all. To squander great private fortunes, to realize private magnificence, is a purely selfish gratification of fine taste; but to create magnificence, that is the common property of the poorest as well as the rich, is the grand unselfishness of true democracy.

ROOTING TENDRILS AND LEAVES.

BY E. FRYER, NAPERVILLE, ILLS.

In the March number of the *Monthly*, Mr. James Charlton makes some interesting remarks on the rooting of the tendrils and leaves of grape vines. Having experimented some in the same field for a few years past, I thought I would give the results which I have not before considered of sufficient interest to publish, but Mr. C. asks for others' experience.

Almost every observing gardener accustomed to the growing of grape vines, foreign and native, will have noticed on strong growing, healthy vines, that a tendril will sometimes change its form and become a miniature branch, small leaves showing on the upper part of the extended tendril. This fact I think, goes to show that such tendrils at least are rather more than "modified leaves."

I have in many instances taken the leafy part of this tendril when it acquired the proper condition, cut it up in pieces with a leaf at each, and rooted them in the ordinary way; the second season they will make strong plants, but as to whether they would bear fruit as well as cuttings struck from bearing wood, I have not yet had any experience. Healthy *leaves* I have struck, with certainty and ease, and in one season they become a plant perfect in all its parts. With the tendril only I confess I have not been so successful as Mr. Charlton. I have rooted them occasionally, but never succeeded in obtaining a perfect plant having either leaf or branch. If Mr. C. means by *tendril* what is generally understood as such, having no leafy appendages whatever, and has obtained from these leafy plants that ripened, he has accomplished a feat, which, though it may not be of value to the public, is certainly new and interesting to the general propagator. The tendrils of the Cobæa scandens, and many other strong growing climbers will root as well as those of the grape vine, but require considerable time, from thirty to one hundred days for the rooting process. In every instance I have failed to obtain a perfect plant from any of them that I have experimented with. Not so with the leaves; the Rose, Dahlia, Cobæa, Lophospermum, Passiflora, &c., &c., will all strike at the base of the leaf and become perfect plants in one season. The leaf of the Hoya if taken from a healthy plant, will generally make a plant with a growing shoot the first season; but sometimes if taken from a plant that is not vigorous, or from near the base, owing probably to a want of due development in the leaf itself, though it will root it may remain in a semi-dormant condition for years without sending up a shoot. Almost every one is acquainted with the method of propagating the Begonias, Gloxinias, &c., from leaves, which, by being gently pressed on warm sand or earth make roots, and soon send up leaves making many, yet perfect plants from a single leaf. These facts, though only some, perhaps none of them are new, yet simple as they are in the hands of a practical man, go far to prove the correctness of the theory of the man of science, DeCandolle, that "the leaves of plants are only a changed form of branches."

The practice of striking green cuttings of all the more common bedding plants, and also of hard wooded plants such as the Camellia, Tea plants, &c. When these latter are struck from green cuttings, with only a leaf and small piece of stem to each cutting is also in support of De Candolle's theory. Take away the leaf and the cutting will not strike; in most cases if the leaf is destroyed after the roots are formed the plant will die. In the hands of experienced propagators there is a wonderful power in a healthy leaf. The creed of the old school gardeners, "an eye for a root, and an eye for a shoot," is wholly ignored by our American practice of the present time. We pay no attention whatever to an eye or bud at the base of the cutting, unless the cuttings are so short as to require it, but it is not at all necessary to its rooting. As an instance, Verbenas which are now required in such multitudes, we cut off all the soft part of the young shoots and these cut up in pieces with only a pair of leaves on the top, no bud at the bottom of the cuttings unless required as above stated. Most other bedding plants the same.

The Camellia which, by the old English practice of striking ripened cuttings of the single red variety for stocks, required from eight to twelve months for rooting, is now accomplished in from six to eight weeks when *green* cuttings are used. With us the rooting of Camellia is not confined to the single variety, but is applied to nearly all varieties: the old but beautiful Alba plena being one of the freest rooting of all. While on the subject, I will here state what may seem strange to some, that here in the West, the Alba plena on its own roots is longer lived and more healthy than when worked on the single stock. So of that celebrated variety Sarah Frost, it grows as strongly if not more so on its own roots than when inarched or grafted.

If some experienced grower of the Camellia would give his views of the difference of merit of varieties grown on their own roots, and the same worked on stocks, through the *Monthly*, I presume he would confer a favor on many of its readers.

NOTE ON THE CENTURY PLANT.

BY "OCCASIONAL," NEW ORLEANS, LA.

The great sea-serpent seems to have deserted the ocean, and is now showing himself to the astonished gaze of the highly favored people of Rochester, in the form of a blooming "Century Plant." Please don't tell it where any of these wonder-stricken people can hear it, but for the benefit of some of your unprofessional readers, who may be deceived by the name, would it not be well to state in the most remote corner of your excellent *Monthly*, and in the most modest possible manner, that the American Aloe sometimes blooms in *less* than a hundred years, even occasionally in not more than twenty or twenty-five years. In passing through the upper part of our city yesterday, I saw one, the common green-leaved variety growing in a garden at the corner of Annunciation and Race Streets, which I am sure cannot be more than twenty-five years old, with a flower stem twenty-five feet high, with twenty branches, each branch terminated by a cluster of ten or fifteen buds. The main stem is of about six weeks growth, and will measure near its base about six inches in diameter.

I heard of one in the suburbs on the border of the lake which bloomed quite luxuriantly at the age of twelve or fifteen years, but I cannot vouch for the accuracy of this statement. However the occurrence is sufficiently common here to attract little or no attention, and we are therefore quite amused at the excitement which the "Rappers" manifest at the appearance of this ordinary flower.

RASPBERRIES.

BY WM. PARRY, CINNAMINSON, N. J.

Read before Penna. Horticultural Society, July 6, 1869.

The subject chosen for discussion this evening is one of much importance, both to the grower and consumer of Small Fruits.

Raspberries ripening soon after Strawberries, when there is but little other fruit in market, are eagerly sought after and command good prices.

Their extensive cultivation as a field crop is of but recent date. Formerly a few rows in the garden, furnishing a supply for family use, were all that were grown; then the *quality* was discussed more than the *quantity* that could be produced, and the Hornet, Fastolff, Red Antwerp, Brinckle's Orange, and many other tender or half hardy varieties, that under favorable circumstances would yield some delicious fruits, were esteemed more highly than the Purple Cane, Black Caps, Philadelphia, and other hardy varieties, which yield more abundantly.

In discussing Raspberry culture, we should bear in mind that there are two classes in our community to be supplied with fruits: the wealthy, who are able and willing to pay liberally for an extra fruit of fine quality, prefer the choicest article that can be produced, while the millions of consumers are satisfied if they can have a plenty of good wholesome fruit at a moderate price, and must be supplied from the open field, or not at all. We might as well attempt to stock our markets with peaches grown under glass, as with grapes or Raspberries that will not stand the sudden changes in our climate without artificial protection.

The large quantities of Raspberries now required to supply the markets could not be furnished with the tender varieties, requiring so

much care and attention to protect them from the extremes of heat, cold, drought. and moisture as we have here. Therefore most of what has been written and published in reference to the fine qualities and proper management of imported varieties, and seedlings grown from them has had the effect to mislead and bewilder, rather than to instruct the beginner in the cultivation of Raspberries as a field crop.

In 1838 I commenced cultivating them for market. The prominent object with me has been to grow those which produced the most money with the least labor. and the result has always been in favor of those yielding the largest *quantity* of fruit per acre, believing the *quality* of the kind most profitable to grow for market was good enough for home use. For some years, following the theory of those who could manage the pen much better than the soil. I was led in to considerable loss of money. time and labor, by purchasing and planting such as were highly recommended on account of their superior qualities for the table, and have grown since that time over fifty varieties. many of them imported from Europe, and others raised from their seeds, none of which are reliable as a field crop here.

The same general rule will apply to Raspberries as to other choice fruits, viz.: *That to be successful we must depend on native varieties*, and to improve which, plant the best kinds near to, so as to insure the mixture of the Pollen of many blossoms, which is carried by the wind or little insects, ever useful in their way, passing over the flowers in search of food, thereby combining several qualities in the seedlings grown from them, which could in no other way be found in the same fruit. If as much care and attention were bestowed in selecting and propagating seedling Raspberries from native stock as have been with the Strawberry and Grape, we might yet obtain new varieties superior to those we now have I recently examined a number of new Raspberries grown from seed of the Allen, planted near the Philadelphia for the purpose of impregnation, that seemed to possses in an eminent degree, the most desirable qualities of large size, fully equal to the Hornet, bright red color, delicious quality and very productive. Being of native parentage and thus far perfectly hardy without extra care or protection. there are good grounds to hope that those valuable properties may be permanent, thus combining more excellence than has heretofore been found in any one Raspberry. Yet Raspberries are quite local in their habits, and varieties that are highly esteemed in some localities, under favorable circumstances may not do so well in other sections where the soil, climate or treatment may differ.

What Kinds to Cultivate for Market.

In selecting a few varieties that are most productive and profitable. as the result of 30 years experience in growing Raspberries, I should recommend to new beginners, when practicable to go and see plantations in fruiting of the kinds they propose to cultivate; having noticed the crop of fruit with the surrounding circumstances they can then compare it with their own situation and form a better estimate than without seeing, as to which kinds would be safest to purchase, and by a trial of several kinds most likely to succeed they can determine which is best for them.

The varieties that have done best for me on the light sandy soils of New Jersey are Doolittle Black and Philadelphia having grown from 20 to 30 acres each for several years past.

Both are hardy and productive, but do not come in competition with each other. The Doolittle is early and mostly ripe before the Philadelphia commences, so that the season of gathering the fruit is prolonged, thereby enabling the same numbes of pickers to attend to double the quantity that they could if only one kind was grown, or if the several varieties raised should ripen about the same time.

It is desirable to have Raspberries that will yield their whole crop of fruit in the shortest possible time, following in succession from the close of the Strawberry season until Blackberries are ripe, that we may substantially finish picking the early varieties before commencing on the later. and thus have full picking all the time. instead of tramping over the same ground the whole season to gather a few scattering berries each time.

There are two distinct species of the Raspberries; the Rubus occidentalis which is propagated by the top end of the canes bending over and striking root in the ground, forming a new plant, which in turn sends out shoots reaching still further from the original stocks and thus in a migratory way will soon spread over a considerable space of land, as if in search of new food in the virgin soil to sustain the young plants, which cannot spread or increase from the roots.

The purple Rapberries are of this order such as the old Purple Cane, Ellisdale and Catawissa.

The White, Yellow or Golden Cap and Cream Raspberries; also the different varieties of the Black Caps such as Doolittle's Improved, the Little Miami, Big Miami or McCormic, Davidson's Thornless, Seneca, Garden, Great Western, the Yosemite of California, Mammoth Cluster claimed to be superior to any of them. The Ohio Everbearing Canada and Lum's Everbearing, all native varieties. I do not recollect to have seen an English variety that is propagated from tips, nor a Black Raspberry grown from suckers. The Rubus strigosus, an upright grower is increased by suckers from the roots or by planting root cuttings; and some of them sucker so abundantly as to become troublesome, filling the ground with young canes which crowd and shade the bearing plants to the injury of the crop of fruit. Such varieties should be planted in hills about five feet apart each way, and by the constant use of horse and cultivator can be kept within bounds.

Novelties.

There are a number of Horticultural novelties of little value to grow for market. Some that yield a little fruit for a long time are called everbearing and sold at high prices, but I have never yet seen an everbearing Raspberry worth cultivating for the sale of fruit.

Davison's Thornless

Made quite a sensation because the thorns were not on the canes as usual, but come from the underside of the leaves. They were said to be very early, and sold readily at $1 each. I obtained 600 plants and set them in good soil; have had two moderate crops of fruit. Last Spring a year ago we made a large patch from the tips grown the previous summer, but finding the fruit to ripen at the same time as Doolittles and not yielding as much per acre, we ploughed them under and used the land for other crops. I have never seen a black Raspberry nor a Blackberry without thorns produce fruit as well as others of the same species having thorns; although I have paid five dollars a plant for the smooth novelties. The fact that the plants are deficient in thorns which properly belongs to them, shows that they are not perfect, any more than if they were deficient in leaves or branches.

Varieties will run out.

Among the large number of seedlings that have been introduced as having great merit, how few are now to be found in cultivation.

Perhaps no person has succeeded better in growing seedling Raspberries than the late Dr. Wm D. Brinckle of Philadelphia, many of which gave high promise for a while.

The Orange obtained a wide reputation for a few years on account of its large size, fine appearance and delicious qualities.

The Cushing was the most beautiful scarlet red Raspberry I ever grew. We sold the fruit readily in Philadelphia market at $1 per quart, when other varieties would not bring half that price.

The Col. Wilder was really a Pomological wonder. When I saw the original plant growing in Dr. Brinckle's yard, trained in Espalier form and lattice work by the wall, I think there was fully one quart of fruit on it. hanging from the long branches supported like grapes in a greenhouse, although they had been picking fruit several days previous for family use.

The Vice President French a large, firm, handsome red Raspberry, nearly equal to the Hornet in size and productiveness.

The Woodward, Walker and other choice seedlings grown by him; where are they now?

Similar results have followed the efforts of others in introducing new seedling Raspberries. May not the cause be the taking seeds of foreign varieties to propagate from?

I have discarded dozens of varieties after expending much time and labor on them, besides hundreds that I have grown from seed myself and chose to suffer the loss of experimenting and proving them to be of no value, rather than to distribute them before being sufficiently tested.

Among those the reputation of which is either gone or declining may be named Allen's Antwerp. Allen's Straight Cane, Belle de Fontenay, Bagley's Perpetual, Creton Red, Catawissa, Canada Everbearing, Duhring, Downing's Seedling, Fastolff, Great Western, Hudson River Antwerp. Kirtland, Knevett's Giant, Lindsley's Seedling, Merveille des Quartre Saisons, Nebraska, Northumberland Fillbasket, Ohio Everbearing, R. M. Conklin's French, Red Prolific, River's Large Fruited Monthly, True Everbearing Red, Stœver, White or Yellow Cap, Red Antwerp and Red Queen.

I have cultivated all the above and many more, and found them unprofitable here There are several others still highly praised because there is a good demand for the plants, which is kept up by the exhibition of some handsome fruit of *delicious quality*, but little being said about the *quantity* produced. To name them may

effect the interest of some having plants for sale, yet as I have a large supply, I think purchasers ought to be posted how they succeed with me.

The Prosser was sent out at ten dollars a plant on account of the beauty and excellence of its fruit. I waited a few years until the plants could be had at half price, then purchased twenty valued at one hundred dollars. They have grown vigorously making a fine lot of plants, and fruited two seasons, yet I do not esteem them valuable here, and shall treat them as I have hundreds of my own seedlings, which promised well at first, but after a few years cultivation proved not to be as profitable as other older varieties.

The Clarke was sent out at ten dollars per dozen,and for several years seemed that it would prove valuable, but after fruiting it six seasons and increasing the quantity until we had several acres in bearing, I find it will not maintain in open field culture the high reputation we had given it when only a few rows were grown near the buildings. It is a strong vigorous grower, fruit large, bright red color and good quality; I have shipped it to New York market, where it was sold at sixty-eight cents per quart in competition with the Hudson River Antwerp. Although the quality of the fruit is all that could be desired, the quantity is not sufficient to make it pay to cultivate it as a field crop, as well as the Doolittle and the Philadelphia, hence the principle object in growing it here will be to raise plants for sale.

The Raspberry is uncertain and liable to many causalties that will injure the crop. An excess of heat or cold, wet or drought, and sometimes causes unexplained, will disappoint the fondest hopes of the grower.

A fungus or rust that has for years been preying upon the wild Blackberries and Dewberries and recently has attacked the Dorchester Blackberry, devastating in its march as certainly as the fire blight on the Pears, or the yellows on Peach trees, has also commenced its ravages on the Black Cap Raspberry. Three years since we first discovered it on a small patch of about five acres of Doolittle's, and were surprised to find that every plant affected lost much of its vitality, producing no blossoms and of course no fruit. It first appears on the underside of the leaves, of a reddish yellow incrustation; as it approaches maturity a fine dust of a yellowish cast is formed, which by a little disturbance is wafted by the wind to other bushes near by. The second year there are numbers of small spindling shoots sent up producing no fruit, but having a weak sickly appearance. It has spread so rapidly as to destroy nearly the whole of that patch of Black Raspberries, which we intend to burn and plough the ground for a fall crop of vegetables.

We have another block of twenty acres of Doolittle's, which now look as even and healthy as a wheat field in June, from which we have been picking over two thousand quarts daily for more than a week past If they should become affected, the whole field will be as completely ruined as the smaller patch above named. Here is a subject worthy of investigation, to ascertain if possible the cause and the remedy, otherwise the Black Caps and all that class of Raspberries will rapidly degenerate.

SOIL AND TREATMENT.

A rich mellow soil naturally moist but not wet, inclining to the northward, is a favorable location. Plow open furrows in the fall, six to eight feet apart, and spread meadow muck in them to be exposed to the action of the frost during winter. In spring set the plants three to four feet apart along the rows requiring about two thousand plants per acre. Potatoes or other vegetables may be grown between the rows, the widest way the first summer, after that the Raspberries will require the whole space.

The cultivation is of the simplest kind, stir the ground frequently with horse and cultivator to keep down grass and weeds, being careful the latter part of summer not to disturb the small roots feeding near the surface by deep culture. The old wood may be removed as soon as convenient to do it after the fruit is off, and the canes should be shortened in about one third their length. early in spring, before the buds push out, which will increase the vigor of the plants, and improve the size and quality of the fruit.

The Raspberries should be carefully picked in small baskets, not larger than pints, better less; both baskets and crates should be ventilated so as to favor the circulation of air to absorb the heat and moisture, as they will bear transportation to market much better when cool and dry.

YIELD AND PROFIT.

The hardy varieties with ordinary treatment will yield as many bushels per acre as corn, and will generally bring five times as much in market, and when once planted remain for several years, producing an annual income better than government bonds.

An acre yielding 3000 qts. at 15c.	$450	
Commissions for selling 10 per cent.		$ 45
Picking,		100
Rent of land, cultivation, &c.,		55
Net profit per acre.		250
	$450	$450

Under favorable circumstances much larger returns than the above are sometimes realized. But it is better to keep our views within moderate limits and be agreeably disappointed with larger returns, than otherwise.

For several years I kept a debtor and creditor account with 22 acres in small fruits, which yielded an annual profit of two hundred and seventy-two dollars per acre.

EDITORIAL.

STRAWBERRIES.

We have long ago come to the conclusion that no client is able to state his own case fairly. However much any one may love truth, it is not in his own eyes as it is in his neighbors, and "what is truth ?" becomes as important a question for us, as it was two thousand years ago.

As the "legal adviser" of the great public, we are careful not to give an opinion until we have well weighed the evidence, hence the *Gardener's Monthly* is never found in haste to praise, or eager to condemn any system or variety. On the Strawberry question we determined to take a tour during its season, compare notes, and draw what may seem to us fair deductions from them. We started on the 20th of June, Strawberries being in their prime at home, and journeyed through Pennsylvania, Central Ohio to St. Louis, up the Missouri to Hermann and Bluffton, thence through Chicago to Windsor, and Detroit to Pittsburg and home, thus affording us a chance to see things under the most widely separated climates and systems possible.

At home we left the Strawberry a drug, peddling through the streets at three quarts for twenty-five cents. We need not dwell on the system pursued, as Mr. Satterthwaite's essay has done this very well. His plan is the one most popular here; and we found the same one pursued by Mr. N. Ohmer of Dayton, Ohio, and we are inclined to think that a greater weight of fruit per acre can be had by this system than by any other; on the other hand we are as well satisfied that a greater weight of greenbacks per acre follows the hill system of culture.

It is strange that in a run of three thousand miles, we should see the hill system of culture nowhere in use except at York and Pittsburg, Pa. Those who attempted it did not understand it. Dr. Hull well remarked to us at Alton, that of those who come to visit his orchards and plans, the great majority look on and hear, but neither see nor understand. As a *system* the hill plan is nowhere in use that we can find, at least in perfection, except by Knox. All our readers know this plan, we need not repeat it here, but the result is that a larger number of large berries are produced, which always bring a larger price, no matter how the market may be drugged with small ones. Thus while we found the *best* berries of Dayton,those of Mr. Ohmer,selling at four dollars per bushel, we found the same pickings at Knox's bringing twelve dollars. The labor on an acre of hill culture from the time it is set out till the time it is destroyed, (four years) is not half what it is by the bed system (two years). We are satisfied that this system properly understood is the most profitable and the best.

As to varieties. we have seen nothing anywhere like the Jucundas at Knox's. There were thousands of berries in every direction, of which twenty-five would fill a quart For these he was getting *a dollar a quart*. These are put up in boxes like railroad conductors' ticket boxes, at $6,50 per box of six quarts. It is proper however to say that alongside of these Fillmore, Agriculturist, and some others were very nearly as good· It is the *system*; the system *well understood*; nearly as much as the variety. Yet Jucunda was remarkably fine everywhere. At St. Louis and Alton, we saw good specimens, and heard good reports; but at Detroit, we found them more than good, and growing in favor Mr. Ford, and Senator Adair both large Strawberry growers, showed us magnificent beds of them. At Windsor in Canada, at Mr Dougall's,we saw La Constante in better perfection than we have ever seen, and could not help thinking how glorious would be the sight if they were grown on an intelligent hill plan. As they were, they were little inferior to Knox's Jucundas in size, though on account of the runners being allowed

to grow on the bed system, there was not half the fruit there might be. Mr. D. says Wonderful is often sold for *La Constante*. We found him busy weeding out his beds, in which he takes a just pride. The Wonderful is easily distinguished from the true La Constante, as it has a slightly purple tinge to the runners: La Constante being green like Triomphe de Gand.

At Dundee, on the grounds of Mr. Scranton we had the opportunity to see beds of the *Mexican Everbearing Strawberry*. There were probably two acres of them in full bearing, and we regarded it as one of the prettiest sights we ever saw. It is clarly an Alpine variety of *Fragaria Vesca*, and the botanist who has made it a new species, is undoubtedly in fault; and yet he may be pardoned, for though an Alpine, it is just as much superior to the Alpines common in cultivation as the Jucunda or Wilson's Albany are superior to the little trash of former days. The fruit was not as large as the finest Albany; but fully equal in size to much of the Albany crop sold in market. Then as to the amount of crop. The usual varieties of Alpine are very poor bearers; but so great was the profusion here, that from an estimate we made, we would not be afraid to guarantee *two hundred bushels* to the acre during the whole season, a half bushel could easily be gathered from eight square yards, making about 40 bushels per acre at a single picking This variety is readily distinguished from other Alpines grown, by its greater tendency to produce blossoms. We have seen Alpines bear a few flowers occasionally from the runners; but this one bears profusely from the runners as they grow. Another bed which we saw on the grounds of Mr. J. P. Whiting at Detroit set out on the 12th of May, was not only bearing large fruit abundantly, but the runners from them were also bearing. In the forthcoming number of the *American Naturalist* will appear a paper by the writer of this on the Law or Variation in Fragaria, showing that the Botanists are at fault in making a new species out of it; but as a *new variety* of great value to horticulturists Messrs Whiting & Co. deserve the particular thanks of the amateur fruit grower for their efforts to introduce it to notice.

The Alpine class of Strawberries has scarcely had justice done it. We do not know but it might be made of use as a market fruit. Its everbearing character is a great point in its favor. Its fruit is easily gathered, as the hull can be left behind in gathering as in the Raspberry. Notwithstanding the Blackberry and many other fruits come in, everybody is sorry when the Strawberry goes out They never tire of it. And if this Mexican variety can be made to bear continuously till fall, and with fine crops of fruit — and we think from what we saw here it can,— it will mark a new era in profitable Alpine Culture.

PLANTS FOR SHADY PLACES.

The great pride of an English garden will always be its green grass and broad lawns — the great charm of an American is its ornamental trees and shady places. Unfortunately grass and trees have no affection for each other, so while paying court to one the other turns its back upon us. But as in the days of King Ahasuerus, when an Esther could be found subservient when a Vashti would not bend so we horticulturists are not dependent on the whims of the grasses for clothing our shady places with verdant drapery. Others will minister to our pleasure if these will not and nothing is more agreeable to us in this way than the small Periwinkle (*Vinca Minor.*) It is very easily induced to grow after setting out, and soon covers the surface completely. The ground has to be loosened with a fork, and small pieces dibbled in some six inches apart, then beaten down with a sod beater as if it was grass, and, if very dry, may have a watering through the rose of a water pot.

The many forms of evergreen Ivy (*Hedera helix*), also affords many varieties of green clothing for the surface of a shaded wood. They may be set in just the same as advised for the Periwinkle. But one of the sweetest things for the purpose, is the evergreen Creeping Japan Honeysuckle (*Caprifolium brachybotrya* of gardens). The leaves are not so deep a green as in the other cases; but they are evergreen, and they soon creep over space, and make a dense level surface of green leaves; and then the sweet white and yellow flowers with which they are profusely adorned in June, gives them a value neither of the other possesses

With regard to flowers however, we recently saw an idea carried out, which was a great success. There is now a basket plant very well known to ladies as "Money wort." This is the *Lysimachia nummularia*, or 'Creeping Loose-strife" of old Botanists. Its greatest delight is to creep through deep shady places, especially if a little moist. We do not know how it would do to

make a surface alone; but in this instance it was mixed with Periwinkle, with which it seemed to live in terms of peace and harmony. In June and July the whole mass of Periwinkle was completely dotted with the golden flowers of the Loose-strife, and so much were they in unison, that one ignorant of botany might be pardoned for supposing they were Periwinkle flowers.

There are doubtless other things which would thrive in just such situations; and we should be much obliged if our correspondents would make notes of them and report them for us.

TREE PRUNER.

We have received one of these implements from Mr. W. C. Strong, and think it so valuable that we have had the following illustrations made for our magazine.

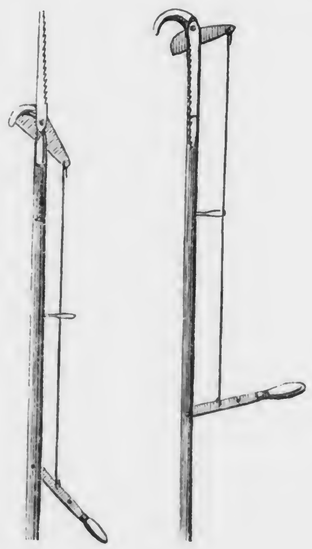


Fig. 1. Fig. 2.

The Figure 2, shows how the scissors is operated by a handle, which gives great power by the leverage, and very large limbs can be cut off with ease. The Figure 1, shows the saw arrangement which is closed on the figure 2, opened out and ready for use. We have had opportunities of examing many kinds of tree pruners lately, and find this one the *best of all.*

A NEW TEXTILE PLANT.

While in St. Louis, we met Mr. Roezel of Vera Cruz, who had found in the Alleghanies, a species of *Urtica*, which had a fibre finer and stronger than the famous "Ramie," with the introduction of which Mr. Roezel's name is, as is well known, connected. We afterwards found this plant abundantly along the Missouri River, and saw that it was *Urtica purpurascens* of Nuttall.

Some of the fibre given us by Mr. Roezel, was tested for us in Chicago, by Mr. Rodney Welch, of the *Prairie Farmer*, and was found to bear a weight of nine ounces before breaking, though finer than the hair of a young child's head. Certainly if the Ramie is of any value, this plant must be of great value, not only for its superiority, but for its being a northern plant, and thus adapted to culture where the Ramie will not grow.

As to the real merits of the Ramie, however, there seems to be a difference of opinion. Mr. Capron denies that any use has been made of it, and asserts that accounts of what have been done with it are pure fictions. He further, as we understand him, asserts that it wants the barbellate character which cotton and silk possess, and *cannot possibly* be used for the purposes said to have been accomplished. On the other hand a recent number of the *San Antonio* (Texas) *Express* tells us that "silk handkerchiefs of the finest quality made from the Ramie, are now common in New Orleans." These conflicting statements are hard to reconcile. We should be glad if some one would send us one of those silk handkerchiefs.

NEGLECTED FRUIT TREES.

The *Horticulturist*, in its July number, has some excellent remarks on fruit growing, with which, in some respects, we cordially agree. The number of grass grown, neglected, and decaying orchards is constantly on the increase; and any system that will induce fruit growers to manure and care for them is much better than neglected grass, or any other kind of neglect. Trees that are cultivated so that the surface roots are continually destroyed will grow very vigorously for a few years; and though they eventually become diseased and easily die away, the owners get some fruit, which under neglected grass they never do. We hope our friend will continue to draw attention to this.

SCRAPS AND QUERIES.

PERSONAL ACKNOWLEDGEMENTS.—During a recent visit to St. Louis, we were very much gratified by the kind attention of our horticultural friends, particularly to Henry Shaw, Esq., whose guest we were during most of our stay, and whose beautiful botanical garden furnished us an inexhaustible fund of interest. To Dr. Morse of the *Journal of Agriculture*, we are also very much indebted, as he was our constant guide and companion in hunting up friends, and visiting points of interest, and in whose botanical and classical tastes we found congenial pleasure. We were pleased to find the "*Journal*" in a very prosperous condition, which its philosophically practical spirit well deserves. It is now entirely owned by Messrs Studley & Co., also proprietors of the *Entomologist*, which is also received everywhere with wonder and praise,—praise for the great liberality with which it is so accurately illustrated, and wonder how such liberality can possibly pay. Mr. Hussman also made us much his debtor by hospitable entertainment at Bluffton, where his vineyards show what practical intelligence can successfully accomplish, and whose "Grape Culturist" is giving monthly enthusiasm to hundreds of others who are anxious to do over again for themselves what he has done. The *Grape Culturist* has not yet been a year in existence; but also promises in common with most St. Louis enterprises, good success.

Col. Moore, Messrs. D'Oench, Bush, Jordan, Saml. Miller and others, we are also indebted to for favors, which we hope to turn into benefit to our readers from time to time. Our hunt after Colman of the *Rural World*, only found his establishment in ruins; a very good sign of success, as we saw that something better was going up in its stead.

Our thanks are also due to many other friends in other towns and cities, for cordial greetings and many kindnesses; but we cannot close the subject without particularly naming Mr. Emery of the *Prairie Farmer*, whose kind attention at Chicago and elsewhere, we shall not soon forget.

PEA—MCLEAN'S EPICUREAN.—This variety, received from Col. Capron of the Agricultural Department, proves to be an excellent variety. Sown in Early April, about the usual time of other early Peas, it has proved a very large podded variety. It is not so early as some others, but it continues to produce long after others have ceased. Its quality and productiveness is also first class.

TASTE AND AGRICULTURE.—A correspondent of the *Hartford Courant*, thus speaks of the Durfee plant house, at the Massachusetts Agricultural College:

The Durfee plant-house is a fine collection of tropical vegetation—a gift to the institution from Dr. Durfee of Fall River. Any sober stranger may go in and out freely, without the bore of an attendant. Such an attachment to the college is admirable, and it will not do for poorer institutions or individuals to examine gift horses too closely, unless, as here, they are to be used for breeding purposes. As farmers and their sons will look this way for new ideas, I cannot help wishing that some friend of the college had established for the use of the students a ten or twenty acre vegetable and fruit garden. Probably a country lad would not be especially benefited if allowed to bathe in one of the tropical tanks of the plant house, but if he could see tidy plantations of asparagus, prolific rows of green peas, an acre or two red with ripening strawberries, all to add to the healthful pleasures of the common table—there would be a lesson conveyed which would increase the breadth and tilth of the home garden, and the abundance of early sauce upon the farmer's board. It should be understood that the broad lands of this college, while showing fairly fine horses, cattle and sheep, are firstly and lastly for the benefit of the young men who are passing some of the most critical years of their lives here. It cannot be too well known that college life is often detrimental to health. While young men may come here and learn how to feed pork to profit, there is more need of a knowledge how to feed themselves. Hence, let us be as fond of fruit as the original Adam. I am sorry not to see long rows of early tomatoes, raspberries, blackberries, and water melons. The plant house, as I said before, is a fine thing, but it is the Yankee mistake of making sure of the parlor before we have well established the kitchen.

Now if this college pays no attention to vegetable raising, it is certainly a great oversight; but we do not see that this should be a reason why the "parlor" should be sacrificed. It is only by making these colleges attractive, by making their surroundings beautiful and lovely, and by giving the students something more than they could find at home, that they are ever to be made a success. Pennsylvania has tried the "kitchen" system pretty thoroughly in her Agricultural College, until, at the present time, the number of "Professors" and students are about equal. The Massachusetts college, on the other hand, is a grand success, and we believe chiefly on account of just such attractions as this one of Dr. Durfee's. By all means give the boys more of the "kitchen," but not less of the "parlor" on that account.

THE INFLUENCES OF SUN HEAT ON FRUIT.—Never was there a greater mistake made than that of supposing that fruit produced in the shade has the best flavor; it is a false notion, the mere chimera of half a century ago. The Black Hamburg Grape is, to some extent, an exception; for its berries will not color if the branches are deprived of too many of their leaves, so as to let the sun in amongst the bunches too freely; whereas, the Muscat of Alexandria will not attain its rich amber color if so much overcrowded with leaves as to keep the rays of the sun from penetrating freely amongst the bunches.—A pine apple produced in the winter has not flavor of one ripened in the summer months of the year, when the sun is powerful. Again, under the old method of planting strawberries in beds four feet wide, the fruit is not to be compared, either in size or flavor, with that of those planted out in single rows. Now, what is the reason of this? I contend that it is in consequence of the action of the sun upon the fruit The fruit shaded by leaves will always be more or less insipid and worthless, as compared with that on which the sun has had full play. It is the sun that puts flavor into our fruits.—*Journal of Horticulture.*

We find the above copied approvingly into some of our agricultural exchanges. While it was confined to its original source, we might have laid ourselves open to a charge of "jealousy," or "baiting a trap" to criticize it; but in view of its wide dissemination through the "travelling rounds," and the great injury it must do if accepted as a code of practice, we think it as well to notice it.

The ripening of fruit does not at all depend on the action of the sun *upon it;* yet the sun is necessary on *the leaves*, and it is this action which gives the flavor to a pine apple. The pine apple may be cut off before ripe, and laid in ever so hot a sun, and it will never get so rich a flavor as if ripened on the plant. Ripening is a vital and not a chemical process up to a certain time. After vitality has done all it can do, then decay commences, and this to a certain extent is an elementary part of the ripening.

It will be found in practice a very dangerous doctrine, that any other fruit than a black Hamburg grape can be "ripened" better by having its leaves pulled off to "let in the sun," and we venture to say that any one who recommends it, never tried it

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SODDING OR SEEDING LAWNS.—*D., Pittsburg, Pa.:* "I have a piece of about one acre to make into a lawn; some advise to seed down, others to lay sod. Which do you think the cheapest and best?"

[Cheapest we think *seeding down*, —best we think is sod. If you sow, many weeds will come up, which will give trouble in time, unless the lawn is weeded for a year or two; but with sodding, nothing much ever grows but what is in the sod you lay; and you have a lawn "*once now and forever*" if properly done. But all have not ready money enough to pay for all this at once,—hence seeding down is most popular on large lawns.]

PETUNIAS AND GERANIUMS.—*Mrs. L., Tiffin, O.*, writes: "This spring, not having enough scarlet geraniums to make a large bed, I mixed a few Petunias through with them. The effect is very pretty; but what I want to refer to chiefly is the *illusion*. No one knows what they are, and even good florists think I have *Scarlet Petunias*, until they are closely examined. Have you ever noticed this illusion before?"

[We have not, and the idea is a very good one thus to give additional interest to a Petunia bed.]

A JEALOUS CONTEMPORARY.—*Messrs. J. E. Tilton & Co.* issued a circular a few years ago, informing the public that a "high toned journal, not edited by persons connected with horticultural establishments," was a sad necessity. It has therefore been our "sad duty" to show the public occasionally how pretty a child the parental necessity has brought forth. Now Messrs. J. E. T., & Co., go all the way round to the *Mobile Register* with a lugubrious epistle, to wit, that they have a "jealous contemporary;" a "Philadelphia magazine," which it seems is "baiting traps" to "catch them,"—all which reads pretty enough.

It is hardly worth while to seriously refer to this charge of "jealousy." Certainly if we have criticised them, we have as often quoted good things from their pages. Had we been "jealous" it would have been better to maintain a studied silence, as they do about us. Our notices of them are the best kinds of advertisements instead of indications of "jealousy," if they were not too "jealous" themselves to see it.

We may say for the benefit of our brother editor at Mobile, that we did not make the note quoted from our pages from "information," but with the catalogue referred to actually before us. The catalogue came to the "*Gardener's Month-*

ly" precisely as hundreds of other catalogues do; and no doubt one went to the office of J. E. T. & Co., as to other offices; but they probably had not the "time" to read what comes to hand. That they had to get the first information from a "jealous contemporary," and that too a "Philadelphia magazine," is a misfortune on which they are much to be commiserated.

"CACOON" VINE.—Can any correspondent tell us what plant the following newspaper paragraph refers to:

"A patent has been taken out in the Island of Jamaica, for the working up of a fibre called the Cacoon vine, and a large factory is being erected for that purpose. The fibre can be used for matting, stuffing for bedding and other purposes. It also produces thread hardly distinguishable from silk valued at 28s per lb., woven goods similar to silk, and a rich valuable purple dye."

KILLING SORREL.—*D., Pittsburg, Pa.:* "I have a lot of sorrel in my lawn, and am anxious to get rid of it. I read in an agricultural journal that lime would destroy it, and tried it freely without results."

[It is hard to get a lie out of the world after it once gets in. This one of lime killing sorrel we have kicked and cuffed for twenty years, and yet here he is before us again as cool and fresh as ever. *Lime will not kill sorrel.* As to the lawn, we really do not know how to advise you; but we think as it is rather a strong growing weed, if the lawn be mown regularly every two weeks, it will soon die away; no strong growing weed will live long in a closely mown lawn.]

FOREIGN GRAPES IN THE OPEN AIR.—We have always supposed that the pretension of any one in "New Jersey" to have vineyards made from plants "brought from Portugal," to be sheer lies, and that these "Port wines" of "New Jersey" are simply Brandy and Elderberries. But the *Maine Farmer* has an article to which there is nothing to indicate that it is not Editorial, detailing a visit to these "Oporto Grape Vineyards," in which the writer says he saw the Vineyards, "from 50 to 100 acres"—a pretty good margin,—"among them the Oporto." "As may be supposed, the utmost care and unceasing attention were necessary to bring the slips of the Oporto grape to a bearing point, through all the vicissitudes of our climate, but they are now healthy and vigorous, and prolific bearers." Now what we want to know of the *Maine Farmer* is, has any one connected with its corps *really seen this as described.* These accounts of visits to gardens are very useful when honestly reported,—but when stories made of whole cloth are given as facts, they do harm in many ways.

WRITE YOUR STATE.—We have Hogestown in Pennsylvania, and Hagerstown, Md. Writers from these places seem to takea malicious pleasure in never giving their States. In manuscript the names look exactly alike,and in mailing the answers go "crosswise." Always put the *State*, no matter how well known your town may be. A letter for us from France once went to Philadelphia in Greece,because U. S. was not added; and too often our letters turn up in Germantown,Tenn. because Penna. is not plain.

HARDINESS OF DOOLITTLE RASPBERRY—*F. Madison, Wis.*—I have some idea of planting a good lot of this Raspberry this fall with a view to market; but I am told that in many parts of the State it is not hardy. A few I have growing seem to thrive well enough,but this is garden culture; and in view of the doubt would be obliged by your advice before embarking largely in the venture.

[Plants frequently get injured by many causes during the growing season, and, their vitality being weakened, they easily fall a prey to even a moderately low temperature. Wherever the plants are thus healthy any variety of Raspberry or Blackberry is hardy even up to the North Pole. When they die, it is a question of disease not of low temperature. Therefore if you have a healthy stock of Doolittle Raspberry to set out, and can keep them healthy, you need not fear the effects of a Wisconsin Winter on them.]

LAWN MOWERS.—*R. L., Cincinnati, Ohio,* asks: 'Whether we favor lawn mowers?" He thinks from former articles we do not. This is a mistake. The *Gardener's Monthly* has been their earliest and constant advocate. True we have pointed out that evil sometimes results from them. This we have not done to depreciate mowing machines, but to show how they may be made still more perfect. A lawn well kept is one of the greatest attractions to a home, and they cannot ever be so well kept, or so cheaply kept as with a lawn mower. American machines cost about $75. English ones about double, yet we think from the poor quality of the former the dearest are the best.

HOLLYHOCKS.—*P. B. G., Baltimore,Md.*—"I have a beautiful double crimson Hollyhock, which I am very anxious to save, but am told they will not reproduce themselves truly from seed. How shall I manage it?"

[They will come generally true from seed, and we think this is your best way to raise them. Sow the seed as soon as ripe, and shade the ground a little from the hot sun until the plants get strong. Or the seed may be saved till spring and sown, but they will not then flower that year—In Europe Hollyhocks are propagated by cutting up the flower stem into eyes, before the flower opens, but in America seeds only are employed in propagation.]

BEAUTIFUL COLORED PLATES.—Amongst the most enterprising of our American Nurserymen is F. K. Phœnix. He has now added the colored plate business to his world of cares. We have now before us a fruit piece from the establishment, prepared by W. H. Prestele. We are in the habit of admiring European art in this line, and have often wished Americans could successfuly compete with it.

We now have it here. We never saw anything of the kind better executed from any part of the world. We wish the new enterprise every success.

MENDENHALL'S DIBBLE,—WILLIAMSPORT FORKS.—*M. E. E., Burlington,Iowa:* The dibble we do not know that it is made for sale anywhere, any blacksmith can make one like it. From the frequency with which we receive these inquiries it would probably be to the interest of some of our tool men to keep them. The Williamsport forks we believe are on sale by the leading Hardware firms of Philadelphia,and probably of other Eastern Cities. By inquiring for them through the Hardware stores of Burlington,they could no doubt get them to order for you.

COMPLIMENTARY.—A friend, who fills a seat in the Senate of one of the North Western States, recently remarked to us, that he had been a regular reader of the *Monthly* from the first number, and though he could usually detect the politics or theology of most writers, no matter on what topic they wrote, after watching some time, he had failed to detect them in our magazine. We satisfied our friend that in neither of these points did the Editor occupy any negative ground, though differing in both from our friendly inquirer; yet we regarded it as one of the best compliments paid to the management of our magazine, as our aim has ever been to make it a first class Horticultural medium, and *nothing else.*

FINE STRAWBERRIES.—The *Oxford Press* says at the meeting of the Board of Managers of the Chester Co. Experimental Farm, Mr. Engle of Lancaster county exhibited some very fine specimens of hybrid and seedling strawberries. The chair appointed Thomas Meehan (editor of the *Gardener's Monthly*), and Joseph T. Phillips a committee to examine the strawberries, who made the following report:

"The committee appointed by the annual meeting of the Board of Managers of the Eastern Experimental Farm, to report on some seedling strawberries exhibited before them by Mr. Henry M. Engle, respectfully report that some of them are berries of the largest size and highest flavor, equal to the best now out, and if they shall prove productive and hardy will prove valuable additions to our list of varieties."

TRANSACTIONS OF THE ILLINOIS STATE HORTICULTURAL SOCIETY FOR 1868.

The State may be proud of this work. It is a credit to all concerned. Out of 350 pages, in which hundreds of minds have contributed in speeches and essays, it is hard to find a foolish thought; on the contrary, scarcely a page but which will interest the wisest.

We think Illinois must be singularly favored in men who unite practical experience with a philosophical spirit; we are quite sure no such a valuable paper has ever been issued before. It is a complete treatise on fruit growing, and deserves to be in all libraries side by side with the most popular treatises of the most eminent authors. Horticultural book makers of the present day, are mostly far behind the newspaper reader in general in intelligence; most of them have to "read up" somewhat, before taking up their pens. If there are at present, any purposing to enter the field of fruit authorship, we cordially recommend them before doing so, to get the 1868 proceedings of the Illinois Horticultural Society.

LIVE BARK OVER DEAD TREES.—In the window of a Boston store, is a section of a tree, which was procured in Hallowell, Me. A number of silver poplar trees were transplanted about twenty years ago in the cemetery in that place They averaged two inches in diameter at the ground, and were five feet in height. One of the trees were damaged by the ice, and when cut down recently the original tree was found imbedded in the centre of the trunk, and of the same size as when transplanted, but without the bark. All the growth of the tree was outside of, and detached from, the original tree, which fell out when the tree was split. At the time it was transplanted several of the limbs were cut, and the marks of the saw were distinctly preserved.

Those who have read the *Gardener's Monthly* from the commencement will understand this phenomena. We have taught that there is more vitality in the bark than in the wood of trees. The latter often gets killed in winter when the bark gets through uninjured. In this case the trees were no doubt transplanted in the fall, the wood got killed, the bark survived, the sap was drawn up through the live inner bark in spring, and a new layer of wood formed in summer, of course pushing the bark outward as in the regular way. The fact is a beautiful illustration of the lessons we have taught.

IMPROVED LAWN MOWER.—The greatest objection to lawn mowers in common use, is the clogging up of the wheels by the short grass. We are pleased to see that Messrs. Graham, Emlen & Passmore have, in their "Philadelphia Lawn Mower." an improvement which removes this objection. The cutter knives are also adjustable to the wear.

We are also pleased to note the prosperity of this reliable house. They have purchased a very fine store near to the one they have heretofore leased, and will remove to it as soon as the necessary beautifications are finished.

DISEASE IN PRIVET HEDGES.—*W. S. M., Bardstown, Ky.*—Having just read your remarks on fine hedges, I thought to apply to you for information about my Privet Hedge. It was planted three years ago, on three feet deep, trenched, sandy loam, mixed with some lime rubbish. It is three feet high, and three feet wide at the base, and had a very fine appearance until lately, when it began to die on several places up to the top, and on some places only below. Any information given as to the cause of this, in next number of the *Monthly* would oblige me very much.

[This disease is caused by a fungus very closely allied to the one which causes the fire blight in the Pear. There is no remedy but cutting away the diseased parts, as soon as the bark can be seen to be injured, or at least as soon as the leaves are seen to wither. It is possible you may thus eradicate the disease. If it has already got much headway, it would be best to cut the hedge down to near the ground next fall, and when it shoots out again next year, watch for the first coming of the disease.]

EUMELAN GRAPE.—*Housbrouck & Bushnell* inform us that they will have several large vines of this variety in full bearing this year, and invite those who wish to inform themselves of its real merits to call and see, and judge for themselves.

DELAWARE STRAWBERRY CROP.—The produce this year has been from 80 to 100 bushels per acre; and the average price to the grower, from $3 to $4 bushel per acre. $500 per acre has been considered a fair rate of proceeds, and even at these low figures was considered a paying crop.

THE CAMELLIA IN JAPAN.—In an entertaining and truthful work, entitled *Our Life in Japan*, the following occurs on a subject peculiarly interesting to horticulturists: "The growth of the camellia-tree in Japan is most wonderful Let not the smile of incredulity light up the face of the reader when we state that we have seen some of them attain the height of at least forty feet. Many such as these we passed, and the appearance of them in full blossom may be imagined. Before we had seen this ourselves, we should have thought it about as likely a circumstance that we should one day sit under the shade of our own mignonette as that we should ride for miles under camellia-trees in full flower. Later in the season, when the camellias have ceased to bloom, their place is supplied by the azalea, which marks the hill-sides with gaudy patches of crimson, and the landscape becomes more gorgeous than ever."

NEW AND RARE FRUITS.

GOOD SEEDLING RASPBERRIES.—Very few persons derive much success from careful experiments in raising seedlings. In the Raspberry line, the many fine varieties of Dr. Brinckle are almost all out of mind. Yet one which no one knows the origin of—a seedling found in a pasture, the *Philadelphia*, bids fair to last for many a long day. But experiments will and should go on—no doubt reward will fall to some person's "luck" in the end.

In the Raspberry line, one of the most persevering of experimentors has been David W. Herstine of Philadelphia—we have every year watched his numberless seedlings without detecting indications of much promise. However we were pleased to notice on a recent visit signs of great value in two of them, No. 1 and No. 3. The first was a very pretty sight; we think no variety of the foreign class could possibly have a more abundant crop. We counted one average panicle, and multiplied by the whole number of panicles gave *two thousand* fruit, mature and imperfect, supposing only half to be of an useful size. One thousand good berries is not a bad crop. The fruit is as large as Hornet, as good as the Allen, which it somewhat resembles in form and color, except there is more of a vermilion tint with the scarlet. The canes are very strong and vigorous, as much so as the Hornet was in its best day. No. 3 is a very deliciously flavored berry, resembling no one that we know in this particular. Certainly Mr. Herstine has room to be encouraged by his success so far, and we trust this success will induce more of our friends to persevere in the efforts to produce good seedlings.

THE NICANOR STRAWBERRY.—An opportunity of seeing this new seedling of Ellwanger & Barry's in bearing, has given us a very favorable impression of its character. A plantation of more than half an acre has been cultivated on the hill system, and the masses of fruit, just beginning to redden when examined, we never saw excelled in abundance or quantity by any sort. Some of the berries measured more than an inch and a half longest diameter—the average size is about equal to the Wilson—while the flavor is much superior.—*Country Gentleman.*

THE KENTUCKY LATE STRAWBERRY.—While our markets have been well supplied with Early Strawberries, we have not given so much attention to large late varieties as their importance would demand, consequently good Strawberries become scarce before Raspberries make their appearance. We were shown some very large fine Strawberries on the 19th of June, introduced by Wm. Parry of Cinnaminson, N. J. The plants are strong and vigorous, with long stout fruit stalks, bearing the berries well up from the ground; blossoms perfect, fruit very large bright scarlet red, beautiful and firm, bearing carriage well, excellent quality and very productive, called the "Kentucky," a seedling raised by J. S. Downer of Kentucky, from Downer's Prolific, which from all we can learn will prove a valuable late variety.

MOORE'S SEEDLING STRAWBERRY.—The *Country Gentleman* says: "A single season's experience with this variety, on a limited scale, on our own grounds, indicates its early and productive character and fine quality." Mr. Moore has spent a great deal of time and trouble on raising seedlings of both Grapes and Strawberries, and we are very glad to hear of his promising success.

DOMESTIC INTELLIGENCE.

FRUIT STEALING.—Near St. Louis, Thomas Foster, aged 21 or 22 years, undertook, along with another young man named A. J. Whitmore, on an evening in August, at half past eight o'clock the sun setting about seven, to take the most luscious and largest peaches from among ten trees, belonging to H. W. Weisse.

He stood in the tree and Whitmore on the fence.

H. W. Weisse had been annoyed by parties stealing his fruit; threatened to shoot; borrowed a gun; fired two shots of No. 4 shot; struck Whitmore in the legs and arms, and Foster in the chest. Foster ran some two or three hundred yards; lay down and died. Weisse never denied the firing, and the testimony in favor of his quiet, kind disposition, was unimpeachable. Weisse was sentenced to a fine of $100, and three months imprisonment.—*Rural World.*

VINELAND STRAWBERRIES.—Four thousand bushels of strawberries were shipped from Vineland, New Jersey, during the week ending 16th of June; this is exclusive of north or south Vineland.

CURE FOR POISON OAK.—A correspondent of the *S. F. Alta* gives this as a cure for Poison Oak:

"Simply bathe the parts poisoned with hot water, as hot as can be borne; keep increasing the temperature till it can no longer be used without burning. Press a soft towel against the parts, so as to absorb the water, and avoid rubbing; then apply a "rather strong" solution of strong navy, or plug chewing tobacco on the poisoned places, and let it dry. The solution is best when the water is hot. I have tried this and have been cured, or very nearly so, in two days—four days at the most.

THE CREVELING GRAPE —A correspondent of the *Prairie Farmer* speaks highly of this grape as adapted to the West, and thinks the uniformity of its character depends partly on the depth to which the roots generally run. On account of this peculiarity, he says he can take up well grown vines of any other variety in half the time required for the Creveling.

OX-HEART CHERRY IN MISSISSIPPI —It has been generally stated by agricultural papers, and generally believed, that the May cherry, or Ox-Heart, would not succed in this State; in consequence of which I have not attempted to grow them, except by way of experiment. One tree was planted nine or ten years ago, which has borne well and matured the fruit for the three past years. It only wants an elevated situation and a deep mellow soil in which to thrive here as well as in Eastern Virginia.—*Yalabusha cor. of Ag. Department.*

A WONDERFUL STRAWBERRY.—"SPADE," a correspondent of one of the western papers, says a wonderful variety of Strawberry has been discovered.

He says the new variety is known only to Mr. Seward and a few confidential friends, and is denominated the Alaska. Its fruit stems are from one to two feet long, thick as a man's finger at the base, terminating in a sort of spikelet; and when in bloom resembles a large hyacinth, more than anything else. Each blossom produces three berries—resembling an enormous bunch of grapes standing erect! The berries are about the size of hens' eggs! The plants are everbearing, the fruit compact, and will bear transportation as well as a potato.

An enormous price has been offered Mr. Seward by the proprietors of the *Gardener's Monthly*, who will donate it freely, not only to all subscribers but to all readers, thereby securing a circulation greater than "all combined."

THE MASSACHUSETTS AGRICULTURAL COLLEGE has recently acquired a valuable Herbarium containing 14.000 species and 25,000 specimens. Sections of different trees from the Himalaya mountains have also recently arrived, and 500 plants are soon expected from the Rocky Mountains which have lately been collected.

DRYING FRUIT.—A correspondent of the *Rural World* finds an ordinary hot-bed a capital place for drying fruit A floor is laid inside on which to place the fruit. Then put on the sash, but be sure to raise both the upper and lower ends about two inches, to admit of a free circulation of air, or the fruit will bake as it would in an oven. Here the fruit will not be wet in a shower, nor will it be troubled with insects, which will be kept away by the covering and the intense heat. Parboiled green corn has been sufficiently dried in one day, in this way.

PATENT RIGHTS.—The *Western Rural* says:

"A Western horticulturist has "discovered" that grape cuttings on a sunny and sandy slope, root earlier than elsewhere, and he proposes to get out a patent, to prevent others from using soils thus favorably situated. He has also "invented" a cellar of the right temperature and moisture for preserving vegetables, &c, and proposes to patent that also.

ANNUAL ROOT FIBRES.—It seems after preaching for years, our doctrine of annual root fibres is meeting with general acceptance; except that the old notion about spongioles or *mouths* to the fibres is exploded, the following from the *New England Farmer* is correct. Plants however do draw in their food from the ends of the fibres, call them spongioles or what we will:

"If you examine the roots of trees in the spring, especially roots of last year's growth, you will find no spongioles attached to them, but in their place, innumerable little excrescences, each composed of many cells. From these cells, new rootlets are produced, and to these new rootlets the spongioles are attached. These spongioles are not true roots, any more than leaves are true branches, and they never become roots any more than leaves become branches. As the leaves extract nutriment from the atmosphere so the spongioles absorb it from the soil during the growing season. When their work for the season is done, they separate from the roots and decay in the soil, just as the leaves fall from the branches, and decay on the surface. Could we see the entire tree, root and branch, the parts below the surface and the parts above, during the growing season, we should see the roots and rootlets clothed with hairy spongioles like a coat of fur, while the branches are clothed with leaves woven into tissues of various forms and degree of thickness and firmness. When the growth for the year is over, and the season of rest, the sleep of winter comes on, both leaves and spongioles are thrown off, and the tree, divested of all its clothing, remains naked and unprotected through the frost and bleak winds of winter."

VINEYARDS IN IOWA.—Gen. Kearney of Keokuk, has the largest vineyard in Iowa. In two different enclosures, within two and a half miles of Keokuk, he has 71 acres set in grape vines with fine oak posts and wire to train them on. He has expended in all some $35,000 on his vine yard, and in enclosing the grounds, building tenant-houses, etc.

IOWA TREE PLANTING.—In Iowa the planting of trees is encouraged by law, every acre of trees planted releases taxation for 10 years on $100 valuation, and for each acre of fruit trees planted, tax is exempted on $50 valuation for 5 years, the same for shade trees and hedges along the highways. The result is an extensive cultivation of forest, fruit and shade trees.

LONGWORTH'S WINE HOUSE.—Capt. Anderson has parted with his interest in these works, which now passes out of the hands of the Longworth family. The event has a historical interest, as it was from this establishment that the possibility of successfully competing with foreign wines emanated.

FOREIGN CORRESPONDENCE.

LONDON, *June 19th*, 1869.

DEAR MONTHLY: A fortnight ago we started out of the harbor of New York, and here we are in this great city, and have already "done" some of the noteworthy sights, such as St. Pauls, where rest the ashes of so many of England's heroes; also Westminster Abbey, venerable and noteworthy as the last resting place of Kings and Queens, heroes, statesmen, and poets; but to-day we have been among the living, and would that I could transfer you, with all your readers, to the scene that burst on our vision on entering the Crystal Palace. This has been a gala-day, the attraction being the "Rose Show"—and such a show: literally a "Feast of Roses." Imagine six tables, each over 100 feet in length, stretching through the grand nave of the Palace, arranged on each side with stands covered with moss, and the flowers, arranged some in single, others in three "trusses" (?) of a kind, all distinctly labelled. The competition was spirited, both among amateurs and professional gardeners. Earl Rosslyn's gardener, W. A. Moffatt, carried off the first prize for the best 48 blooms—and such blooms: it was almost impossible to recognize our old favorites, in the immense flowers exhibited. The following is the list: Souvenir d'Malmaison, Mad. Victor Verdier, Homer, Comte de Manteuil, Devoniensis, Alfred Colomb, Madame Ade Rougemont, Beauty of Waltham, Charles Rouillard, Mad. Willermoz, Charles Lefebvre, Chromatella, Mad. Crapalet, Gen. Jacqueminot, Mad. Zoulman, Duc de Rohan, Souv. d'Eliza, Francois Lacharme, Mad. Vidot, La Reine, La Boule d'Or, Paul Ricaut, Charles Lawson, Mad. Bravay, Geant des Battailes, Sombrieul, Maurice Bernardin, Mad. Belinda Kerr, Marguerite Dombrain, Alphonse Lamartine, Senateur Vaisse, Moire, Victor Verdier, Regulus, Pierre Notting, Gloire de Dijon, John Hopper, Souvenir d'un Amie, Souvenir Olibo, Marechal Niel, Madam Boll, Mad. Furtado, Coupe de Hebe, Mad. William Paul, Marechal Buguad.

Among commercial growers, Messrs. Paul &

Son, of Cheshunt, took the lead, their contributions being the most numerous and attractive. Among the varieties exhibited by them worthy of note, and which also appeared in many other collections, were Duke of Edinburgh, H. P., deep vermilion, exquisite in form and color; Prince Camille de Rohan, H. P, velvety crimson, large and full, is also a fine rose, found in nearly all the best stands Messrs. Paul & Son also exhibited a new Hybrid Perpetual *climbing* rose, "Prince Leopold," of a deep carmine; also another of the same class, "Princess Christian," delicate blush and rose,—these will prove valuable acquisitions if truly of a climbing habit, as our list of good hardy climbing roses is very meagre. Among the New Roses exhibited by them, and which received First Class Prizes, was Elie Morel, H. P., rosy lilac, very large, full and fine form. They also exhibited one hundred blooms of Marguerite de St. Armand, H P., a magnificent bright pink rose, to which a First Prize, was awarded.

The following 12 varieties, Tea and Noisette, received the First Prize: Niphitos, Souv. d'Elise Vardon, Mad. de St. Joseph, Devoniensis, Mad. Dartay, Adam, Compte de Paris, Rubens, Souv. d'un Amie, Mad. Bravay, Vicomtesse de Cazes, Triomphe des Rennes

One of the most conspicuous roses at the show was Marechal Niel,—in nearly every stand it shone out prominently. Such deep golden yellow blooms, and in such great profusion, were probably never seen before. It was decidedly *The Rose* of the exhibition.

In an adjoining apartment, Messrs. Waterer, of Woking, exhibited a magnificent collection of Rhododendrons, in full bloom.

Altogether the exhibition was one of rare beauty and interest. This immense building, with its superb works of art,—paintings, statuary, tropical plants, fountains and music, and the thousands of well-dressed ladies and gentlemen,—formed one of those scenes not easily to be forgotten or effaced from the memory.

Thine truly, D.

FOREIGN INTELLIGENCE.

Vegetable Products of N. W. America.—Chesnuts (Æsculus californica, Nutt.) are usually made into a gruel or soup. After being ground in a mortar, they are mixed with water in a waterproof basket, in which red-hot stones are thrown, and then the soup is cooked As the stones, when taken out from the fire, have dirt and ashes adhering to them, the soup is not clean, and it often sets the the teeth on edge. The acorns of several species of Oak (Quercus) are eaten with perhaps as much avidity as they were by the ancient Britons,—only we are too familiar with the process as practised by the "Digger" to throw any shade of romance around it. The acorns of the Californian Oaks are mostly large, and the trees in general produce abundantly, though some years there is a great scarcity, and much misery ensues among the poor natives. They do not, however, contain, in proportion to the bulk, an equal amount of nutriment with cereals. The acorns are gathered by the squaws, and are preserved in various methods; the most common plan is to make a basket with twigs and rushes in an Oak tree, and keep the acorns there. The acorns are prepared for eating by grinding them and boiling them with water into a thick paste, or by baking them into bread. The oven is a hole in the ground, about 18 inches cubit. Red hot stones are placed in the bottom, a little dry sand or loam is placed over them, and next comes a layer of dry leaves. The dough or paste is poured into the hole until it is two or three inches deep; then comes another layer of leaves, more sand, red-hot stones, and finally dirt. At the end of five or six hours the oven has cooled down, and the bread is taken out, in the form of an irregular mass, nearly black in color, not at all handsome to the eye or agreeable to the palate, and mixed with leaves and dirt. For grinding the acorns a stone pestle and mortar is used. The nuts of Hazel (Corylus americana, Walt.) are also extensively gathered as food in some parts of the country where they are found. The fruit of the Crab-apple (Pyrus rivularis, Dougl.) are prepared for food by being wrapped in leaves and preserved in bags all winter; when they get sweet, they are cooked by digging a hole in the ground, covering it over thickly with green leaves, and a layer of earth or sand, and then kindling a fire above them. The fruit of the Cerasus mollis, Dougl., is also eaten. All the edible berries of the country are eagerly collected

by the Indians, and either eaten fresh or preserved for winter use; indeed the "berry sun" is a great season with them; and all throughout the lovely summer weather of North-West America you every now and again come upon women and children, in the woods, engaged in this agreeable pursuit. Equally so is it with the frontier white women and children, who get up parties of this nature for days and even weeks together, into the mountains. I used to come across these ma roening parties in my wanderings, and some of the pleasant remembrances I have of my wild north-western life is the kindness I received from these little-polished but good-hearted people,—acts which I can never return, save by this general acknowledgement in a circle of my fellow-botanists, and I assure you I gladly embrace the opportunity of so doing. Some of the berries, such as the Strawberries (Fragaria vesca, L, F. virginia, Ehr., and F chilensis, Ehr.), will not admit of being dried, and are accordingly eaten fresh, or brought down to the frontier settlements and towns, and there sold to the whites. Nearly all of the others are dried, and pressed into cakes for winter use. During the latter end of summer and autumn, all around Indian villages, but chiefly on platforms, and on the flat roof of houses, vast quantities of these berries may be seen drying, and being superintended by some ancient hag, whose hands and arms are dyed pink with them. When required for use, they are boiled, and form an agreeable desert to salmon, beaver, or venison diet. The berries thus treated are various species of Vaccinium, Gualtheria Shallon, Pursh, Amelanchier canadensis, L., Rubus nutkæanus, Moc, R. spectabilis, Dougl. R. Leucodermis, Dougl. Ribes Divaricatum Dougl., R niveum, Lindl, &c.,—in fact, all the edible berries of the part of the coun try where the particulartribe lives.—*R. Brown, in "Pharmaceutical Journal."*

Sale of Rare Fir Trees.—At a public sale in Scotland a correspondent of *The Cottage Gardener* says: "Few present had ever seen these healthful Silver Firs in such perfection; and although the sale for the 12 to 15-feet specimens was by no means brisk, individual plants bringing only from 10*s*. to 21*s*., their beauty told favorably in the competition for smaller plants growing in the home nursery. Pinus Cembra of all sizes under 20 feet were scarcely less admired than the beforementioned, and the larger specimens brought about the same range of prices. Two noble plants of Abies Douglasii, "the Prince and Princess of Wales," planted in 1844 in a belt of Norway Spruce and other common forest trees, which was then twenty years old, now surpass all the others in size, and their appearance induced a brisk demand for a large number of smaller plants, more especially for a considerable quantity in nursery lines, which had been reared from seed collected in Vancouver's Island. Picea nobilis and P. Nordmanniana were numerous, and many of both were remarkably fine, a few exceeding 12 feet in height, the last ranging from 40*s*. to 60*s*. A 16 feet high P. Pindrow was sold for 39*s*, another 8 feet high 48*s*., and a 14 feet P. Pichta for 47*s*. Two two-year old plants of P. Craigiana, a seemingly distinct North west American species, named in compliment to Sir. W. Gibson Craig, Bart., were knocked down for 24*s*.; and the gem of the Silver Fir tribe, a P. lasiocarpa, 8½ feet high fetched 66*s*. A 3½ feet Abies Pattoniana, or Lord Glenalmond's Spruce, was sold for 25*s*., and twenty small nursery plants of the same sort, but catalogued A. Parryanna, for 80*s*. A new tree Juniper (discovered by Mr. R. Brown, late collector in British Columbia and neighboring regions for an Edinburgh association), which attains a height of 70 feet, and is named Juniperus Henryana in compliment to I. Anderson Henry, Esq., had a number of competitors, and one lot of nine two-year-old plants was sold for 45*s*., and another of eight plants for 44*s*. But the smartest opposition among bidders was for a pair of healthy small plants of the new Mahonia Balfouriana discovered by the same collector, and named by him in compliment to Dr J. H. Balfour, Professor of Botany at Edinburgh; this species is reported as growing to the size of a small tree with a stem 6 inches in diameter, and the couple brought 62*s*. One plant of Prince Albert Spruce, Abies Albertiana, 6½ feet high, brought 17*s*.; and it was generally remarked that not only this, but all belonging the Spruce family, not even excepting the Himalayan weeping one, A. Morinda, displayed an appearance of healthy vigorous growth, which they seldom retain for any length of time when grown in the lower and drier parts of the county.

How to Cook Japan Dioscoreas.—The *Gardener's Weekly* says:—The following is the way in which they are dressed for the table in this establishment. They are first skinned, and washed and sliced, then boiled in milk and wa-

ter for an hour, and served up with white sauce. Another way is to boil as before, let them stand to get cold, then cover with egg and bread-crumbs, fry a fine brown, and serve up quite hot. They are in my opinion the only really useful substitute for the potato, when plainly boiled, although I by no means wish it to be understood that I prefer them to that most useful of all vegetables.

AZALEA AMŒNA.—This is a perfect "gem" for flowering early in the conservatory; its beautiful deep rose-colored flowers contrast so well with the pure white flowers of Deutzia gracilis, and other things flowering at the same time. It is not such a difficult plant to manage, for it will stand a considerable amount of rough usage before it is killed. It requires, however, some degree of care to get it just right, for when it has too much pot-room it produces lengthy shoots which only bloom at the points, and consequently the plants have a somewhat ragged appearance. I grow my plants in two-thirds peat and one-third nice silky loam, which suits them capitally. I pot them every other season. After the beauty of the flower is past, take care to cut in any straggling shoots, and treat the same as the other azaleas. Any shoots that are growing too freely I nip off to induce them to break. In the summer the plants are turned out of doors, and well supplied with water. This Azalea requires to be kept pot-bound; but if the plants are starved too much, the growth will not be strong enough to flower. The half-ripened shoots strike freely in a little bottom heat, but it is best to turn the young plants out in a bed for the first two or three years to grow them to a blooming size. This plan saves the trouble of watering and potting, and the plants can be easily kept in shape with the knife. Those required to flower early should be brought under cover early in the autumn, and then a moist atmosphere, with a temperature of about 55°, will soon bring the flowers out. It is one of the best subjects of its color for cutting from during the spring for bouquets with which I am acquainted. With very little trouble fine specimens can be had smothered with bloom as round as a ball, and from one to two feet in diameter. The plant is so nearly hardy that in sheltered places it may be planted out of doors in the front of a rhododendron bed, and it will take care of itself.—GEORGE GRAY in *Gar. Weekly.*

BICTON GARDENS.—Mr. James Barnes, so long known everywhere as the gardener to Lady Rolle at the Bicton Gardens, has ceased his engagement there, from ill health, and will soon visit the United States.

TREE FERNS.—At the Moscow exhibition, the *Chronicle* says there are of course a vast number of large specimens of every kind. Most of these are, as might be expected, from the gardens in the environs of the capital, but there are also some from other countries, particularly Belgium, which has contributed some of the best. The lion, or at least one of the lions of the Exhibition is unquestionably a new species of Alsophila, a magnificent Tree Fern, having a thick straight trunk about 9 feet high from the top of the tub. The fronds are fully 4 feet long, so that the head is at least 8 feet in diameter. This noble tree is not so well placed as it might have been, but it is still one of the most beautiful objects exhibited. There is another new Tree Fern, equally remarkable, though not so handsome as the preceding. No name is given, but some person has pencilled on the card attached to it "Todea barbara." Whether it is this or not, it is a singular and beautiful object. The trunk is about 3 feet in diameter, and fully 4 feet high, having a profusion of fronds 3 feet long. There is a splendid plant of Todea rivularis, about 8 feet high; the trunk is nearly 3 feet in diameter. Cyathea medullaris, at one of the corners on the rockwork, is a magnificent Fern, fully 12 feet in diameter, and 8 feet high. Not far from this are several very beautiful examples of Dicksonia antartica, about 8 feet in diameter, and remarkable for the rich tint of their fronds.

FRUITS AT THE RUSSIAN EXHIBITION.—There is but little to be said of the fruit. A collection of Oranges, Lemons, and Citrons, from the National Nursery of Athens, contains a great number of varieties, but none of them merit particular mention, unless it is Citrus medica hispanica, which measures from 6 to 7 inches in diameter, and is remarkable for its irregular outline. Other collections from Lyons and Wurtemburg are composed chiefly of Apples. There are also a few dishes of Pears, including good examples of Belle Angevine, which might be called the giant of Pears. The Plums (Coe's Golden Drop), though not numerous, are well grown, and nearly ripe. There are also a few dishes of Cherries, Strawberries, Apricots and Grapes, but they are of ordinary quality. One dish of Grapes, however, contains some beautiful fruit of white and black sorts. Some eight or nine Pine Apples are also shown, but these are not ripe, and only one or two as large as the Queen Pine. Vines in pots are very poor.—*Gardener's Chronicle.*

ERYTHRINA CRISTA-GALLI (Coral tree).—Foliage shining and handsome; flowers crimson scarlet, produced in racemes from the axils of the leaves. The seeds ought to be sown early in March singly in small pots, in a compost of two-thirds loam, and the remaining third equal parts sandy peat and leaf mould, with a free admixture of sand. Place the pots in a bottom heat of from 70° to 75°. Keep the soil moist but not very wet, and near the glass. Admit air freely after the seedlings appear; and when the pots are full of roots shift into pots a size larger, and continue in the hot bed until established, taking out the points of the shoots when the plants are about 6 inches high, shortening them to two or at the most three joints. When the plants are well established remove them to a light and airy position in the greenhouse, repotting them as required until August, then gradually reduce the supply of water, and in October discontinue it altogether, keeping them cool and dry during the winter, but safe from frost. In March cut them down to within two eyes of the base of each shoot, and place them in a house where there is a gentle heat, and when they have shoots 2 inches long shake the plant out of the pot, repot in the same size of pot, and keep close, moist, and shaded until it has recovered from the potting; then expose fully to light and admit air freely, keeping near the glass so as to have the plant dwarf. Plant out in June in rich soil in an open situation, and in dry weather keep the plants well supplied with water, and syringe freely overhead. Take them up before severe weather, pot, and keep them in a place secure from frost over the winter, dry, but not so much so as to cause the lower part of the shoots to shrivel.—G. ABBEY, in *Cottage Gardener.*

ABOUT WINE,—The Pall Mall *Gazette* clearly and unequivocally avers that such a thing as genuine wine is unknown, the stuff drunk for it being the production of scientific chemists, who devote their whole attention to the business. England annually exports to Portugal from a million and a half to two millions of the spirit that gets back to gentlemen's tables in the shape of the rich old wine which no well stocked cellar can be without. An enormous business has been carried on at Hamburg, by which common German wines and coarse spirits are transmuted into ports and sherries. Travelers believe that in the wine-growing countries themselves the pure juice of the grape is to be had at every inn. But Italian wines are not desirable. Neapolitans wine undergo a change at the hands of the doctors before they arrive at Naples. The vintage of the Romagna, adulterated by the proprietor FALERNIAN, is no more. The Greek wine is introduced into the market before it is matured. The best Spanish wine come to town in pig skins that gave it a vile flavor. In a recent trial in New Orleans, about important duties, it came out that not a bottle of genuine Lafitte or Chateau Margeaux ever came here from France. A wine merchant testified that the duly branded wine in dispute was a manufactured article, made of the commonest vintage lees at that, colored by some heavy red juice that was thrown in. Some of these decoctions cost no more than $2.50 per hogshead, but we pay $1 per bottle for them.

ATTAR OF ROSES.—At Umritsur I first found myself in the true East, the East of Myrtles, Roses, and veiled figures with flashing eyes—the East of the "Arabian Nights" and "Lalla Rookh." The city itself is Persian rather than Indian in its character, and is overgrown with Date-Palms, Pomegranates, and the Roses from which the precious attar is distilled. Umritsur has the making of the attar for the world, and it is made from a Rose which blossoms only once a year. Ten tons of petals of the ordinary country Rose (Rosa centifolia) are used annually in attar-making at Umritsur, and are worth from 20l. to 30l. a ton in the raw state. The petals are placed in the retort with a small quantity of water, and heat is applied until the water is distilled through a hollow Bamboo into a second vessel, which contains sandal-wood oil. A small quantity of pure attar passes with the water into the receiver. The contents of the receiver are then poured out, and allowed to stand till the attar rises to the surface, in small globules, and is skimmed off. The pure attar sells for its weight in silver.—*Greater Britain.*

CURCAS PURGANS.—This is an Euphorbiaceous plant, which furnishes a kind of castor oil, analogous to that extracted usually from Ricinus communis. but infinitely more active. It grows in many parts of Africa, especially in the Cape de Verd Islands. The oil, which it furnishes in considerable quantity, has been investigated quite recently by M. Da Silva, who states that it has furnished him a small quantity of octylic alcohol, and that it yields to analysis as much as 6.10 per cent. of nitrogen.—*Scientific Review.*

HORTICULTURAL NOTICES.

THE POMOLOGICAL MEETING.

On September 15th. from all we can learn, will be one of the most interesting on record. In the attendance of members it will be one of the fullest From the south and west, large collections of fruit has already been promised; and even sleepy old Pennsylvania, is awakening to the interest of the occasion. one individual promising to contribute one hundred varieties of apple. The members of the Horticultural Society are preparing to welcome their friends, and will hold one of their famous exhibitions at the same time. to which California will contribute one of the Darlington pitcher plants, which has already safely reached here, and is we believe the first ever seen here alive. Another member of the Society proposes to contribute a striped-leaved American Aloe in flower, as if determined that Rochester and New York shall not have all this glory. The Northern Central Railroad from Baltimore to Elmira, will return delegates free, as also will the Philadelphia and Erie, the Pennsylvania Central from Pittsburg to Philadelphia, and probably some others. Altogether a good time may be expected.

KENTUCKY HORTICULTURAL SOCIETY.

KENTUCKY FRUITS.

A Committee of the Kentucky Horticultural Society recently visited the nurseries of Messrs. Duncan & Sons, of Fern Creek, about nine miles from Louisville, and the reporter thus disourseth on what he saw:

"We first visited the cherry orchard, and found the trees loaded with fruit, already coloring with golden and crimson tints, and giving promise of an early maturity. Some trees were unusually prolific, and so loaded with fruit of a glowing red, as to present, in contrast with the rich, green foliage, a beautiful sight.

We next inspected a pear orchard of three thousand young and healthy trees, just beginning to bear. The crop will not be so large, but the fruit will be fine, as the trees will not be overloaded. The trees were receiving their usual spring dressing, which consists in scraping off the old bark and whitewashing. The limewater kills the eggs of injurious insects, and the whitewash reflects the rays of the hot summer's sun, and protects the tender bark and sap from excessive heat

The peach orchard, consisting of several thousand trees in their prime, was a grand sight Every tree was full of fruit about half grown The peach crop in this orchard we estimate to be fully equal to ten thousand baskets of selected fruit.

After dinner the party visited the strawberry fields. embracing. if we remember aright, some twenty acres. A more splendid sight we never before witnessed. The ground was literary covered with luscious fruit, and numerous hands were busily engaged filling the boxes and baskets ready for market. One hundred to two hundred gallons are gathered daily to supply H. S. Duncan & Sons' customers in the city. The fruit is always fresh, as the hands are not allowed to pick the berries until the dew and rain have been dried off by the warm sun. While waiting for this condition, so requisite to preserve strawberries from becoming soft, wet and fermenting, the pickers are employed in weeding the orchards and ornamental nursery, in which we observed a large and fine stock of evergreens and shrubbery.

The Horticultural Committee were charmed with the opportunity of testing in the open field *seventy* varieties of strawberries, all in fine order and in distinct beds. Many old favorites were recognized and eulogized, but the centre of attraction was a full bearing bed of the "Charles Downing," a new strawberry seedling raised by Mr. J. S. Downer, of Fairview, Todd county, Ky., a gentleman of scientific attainments in pomology, and of rare truthfulness and integrity of character.

The "Charles Downing" was pronounced to be fully equal to all Mr. Downer had represented it to be. The berry is large, conical, red-fleshed, juicy, sweet and high flavored. The vine is prolific, hardy, vigorous, and of rich, dark, large foliage. The flower is perfect, with almost a tendency to be pistillate, so few and short are the stamens; yet the berries were all thoroughly fertilized. The "Charles Downing" is not only a success, but it is more,—a triumph. We congratulate Dr. Downer for having obtained at last, after so many trials, the strawberry; and we thank Mr Duncan for the opportunity of critically examining this new candidate for popular favor, and for having afforded us a delightful excursion to his extensive establishment."

ALTON (ILLS) HORTICULTURAL SOCIETY.

At this meeting, Burr's "*Garden Vegetables*," and Rand's "*Garden Flowers*" were offered as premiums for the best cut flowers offered during the next five monthly meetings. Mr. Huggins, chairman of the orchard committee, presented the following report:

"That the fruit promise in the Alton fruit district, probably was never better for all kinds of fruit, peaches excepted, and we hope for nearly a fourth of a crop, or more of that luscious fruit.

The question how shall we dispose of the coming fruit crop to profit, is one that should receive the early and earnest attention of the fruit grower.

Now is, perhaps the best time to scrape off the rough bark from old apple trees, thereby destroying the hiding place of injurious insects. Let all apple trees be washed body and branch, as far as possible, with a wash of lye, or a wash made by dissolving potash in water, at the rate of one pound of potash to one gallon of water. Your Committe has used, with profit, a wash made by dissolving sal-soda in water, at the rate of one pound of sal soda to three gallons of water. These washes may be applied with a whitewash brush.

Let all leaning trees, not too old, be straightened up, and made to stand upright by stake or otherwise.

Look for the common borer (the larvæ of the *Saperda Vivittata*) at the root of the apple tree; cut them out with a knife or punch them to death with an apple sprout or wire. Look for, and destroy the tent caterpillar now. Pick them off by hand and put your foot on them. Get ready to fight the codlin moth."

Mr. Starr for the Committee on vineyards, reported, "if the hints of last month have been followed, the vineyard will now be snugly tied up, and the ground plowed and hoed.

This will be a busy month as the vines are making rapid growth, and the excellence of the crop as well as the future condition of the vine, depend upon the treatment it receives this month.

Pinch off the shoots close to the last bunch of grapes as soon as it has grown long enough—rubbing out all weak and superfluous shoots. The canes for the following year should, however, be first selected, and carefully preserved and tied up as they require.

After this first pinching, the buds of the base of the leaves will break, and these laterals should be pinched to one leaf. The canes grown for the next year, should be pinched off when they have reached the height of four or five feet.

This will cause the laterals to grow strong, and from them we prefer growing our fruit.

This is all the pinching required, but should be done promptly that the vine's energies may not be wasted Keep the cultivator and hoe going as often as heavy rains or weeds require. Keep a sharp look out for the blue butte. This bug is reported in diminished numbers this year. There is also a small caterpillar which feeds upon the ends of the growing canes, but are easily destroyed."

The Entomological Committee reported a beetle very injurious to the strawberry crop, the *Coronietæna publicaria.*

Mr. Flagg read some excellent notes on the absurdity of the "follow nature" cry, of some shallow thinkers, and concluded by furnishing the following valuable observations on the apple blossom:

APPLE BLOSSOMS.

"The Subject is sentimental and poetic, but I have been taking notes of the color and relative time of blooming of the flowers on different varieties of apple trees. I submit the following notes, taken May 1st, and would be glad to elicit further information on the same subject:

1. The following varieties have the blossom —*White:*

English Golden Russet, Fulton. bloom sparse, Gravenstein, bloom sparse, Large Red Siberian Crab, Newtown Pippin, Red Astrachan, bloom sparse, Sine qua Non, Toccia, Yellow Siberian Crab—3 late, 6 early.

2. The following have the blosssoms *nearly White:*

American Summer Pearmain, Benoni, Early Harvest, Henwood, Jersey Sweet, Kirkbridge White, Large Yellow Bough, Summer Rose, Tetofsky, Williams' Favorite ?—2 late, 8 early.

3. The following have the general appearance of being white rather than red, though it is a little hard to decide as we approach neutral ground :

Ben. Davis, Brabant, Belleflower, Coles' Quince. Dominie. Duchess of Oldenburg, Early Strawberry, Fall Nonsuch, Fall Pippin, Fulton Strawberry, Green Russet, or Winter Sweet, Jonathan, Keswick Codlin, Nickajack, Rambo, Roman Stem. Shockley, Smith's Cider, Sops of Wine, Summer Queen, Sweet June, Talman's Sweeting, Vandevere, Yellow Belleflower, about divided between late and early.

4. In the following, the colors seem to show nearly *equally:*

Hoopes' White Pearmain, 2 Taylor's Garden.

5. In the following, *red predominates* to such an extent as to give a reddish cast to the color of the blossom. This is the largest class.

American Golden Russet. Autumnal Swaar, Belmont, Bethlemite, Carolina Red June, Chandler, Cogswell Pearmain, Cooper, Early Pennock, Esopus Spitzenburg, Fallowater, Fall Wine, Gilpin, Hawley, Hocking, Hubbardston Nonsuch, Lady Apple, Limber Twigg, Milam, Missouri Pippin, Ortley, Peck's Pleasant, Pomme de Neige, Primate, Red Canada, Soulard Crab, Swaar, Tewkesbury Winter Blush, Trenton Early, Willow Twig, Wine. About two-thirds late apples.

6. The following have a marked shade of red in their bloom :

Common Wild Crab, Hawthornden, Maiden's Blush, Wine Sap. Two late, two early.

7. The following seem to be the late bloomers :

(a) The following were hardly opening their blossom buds on the date aboved mentioned.

Buckingham, on young trees, Common Wild Crab, Drap d'Or, Melon, Northern Spy, Rawles' Janet, Rome Beauty, Westfield Seek-no-further ? (Trees bought as such, but they resemble Rawles' Janet)

(b) The following seem rather later than most varieties in blooming :

Bethlemite, Porter, Soulard Crab, Trenton Early.

If it is asked, What does all this come to ? I answer, that if correct, these observations go to show—

1. The safest apples to plant in low or otherwise frosty localities. This we well knew before of the Rawles' Janet. Northern Spy and Rome Beauty, but here seems a prospect of enlarging the list.

2. It may afford some aid in identifying varieties by furnishing other characteristics.

3. It may aid in tracing the origin of varieties. It will be noticed that the Russian and other varieties of a probable oriental origin, have the blossoms white, or nearly white, as descended from some common, and perhaps, peculiar species, as has heretofore been suspected from their common peculiarities of foliage

4. It shows, or tends to show, that varieties with white blossoms are generally early ones.

5. That varieties with red blossoms are mostly late varieties.

6. That the color of the blossoms, in a majority of cases, though the rule has many exceptions, indicates the color of the apple, white apples having white blossoms and red apples red blossoms."

An interesting discussion took place on grape management, the chief points being embraced in the remarks of the two following members :

H. G. M'Pike—I have not failed to ripen a crop of fruit of all varieties for the past five years. I believe early pinching and keeping up a succession of new leaves so as to have three healthy leaves above the bunch, to be all important. If the leaves could be kept free from insects and in a good healthy condition. I should prefer to retain the original leaves but as that is almost impossible. I prefer to keep a succession.

Dr. Hull—I coincide with most of the remarks of Mr. M'Pike. particularly the pinching back to the bunch of fruit. I believe we should leave no more leaves than are absolutely necessary to ripen up the bunch, as they feed on, and consume each other to the detriment of the fruit. If we could keep in check the leaf hopper and curculio fruit growing would be comparatively easy. Tobacco water and soap suds will kill the leaf hopper.

The Gardener's Monthly.

DEVOTED TO

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HINTS FOR SEPTEMBER.

FLOWER GARDEN AND PLEASURE GROUND.

In traveling through the United States, one cannot but be struck with the fact, that there is a growing taste for gardening as a fine art; but that very little knowledge exists as to what should or could be done. It is indeed surprising with so much attempted gardening, there should be so little true taste ; and yet not more so perhaps, that there should be so many buildings and so few fair specimens of fair architecture. Yet it is not that our people are slow to learn, but that they have nothing to learn from. The great want of the time is a better knowledge of landscape gardening, and true taste among our nurserymen and florists. In some places it is easy to see that there is some one about. At Boston, New York, Philadelphia, Cincinnati, Cleveland and St. Louis, it is easy to see by the not uncommon specimens of good taste, that there is one somewhere near who has been sowing the good seed, and in other places we see once in a while a specimen of what good gardening should be ; but generally this is the result of missionary work from the places before mentioned, and not from regular residents on the spot. Good landscape gardeners are wanted all over the country ; not men whose ideas run into the higher and more expensive channels of art ; although these are by no means so numerous as they ought to be; but good men who have the capacity to regulate their recommendations to what those who employ them can understand and afford. As we have said, nurserymen and florists might do more by example. It is very rare that we see any place with any more taste than a common fruit garden or farm, where a single eye is kept to the immediate return of every dollar spent and nothing else. We know that nothing pays a florist better than to lead off in these matters of taste. He creates a custom, which it is very profitable to him to supply. We know one who takes a pleasure in doing a little every year. He cannot do much, but every year he does something which every one admires. Last year he moved a few large arbor-vitæs of which he had an over stock, very carefully so as to make a back ground to a small curved border. Adopting our hint about the beauty of Hollyhocks when seen against a back ground of evergreens, he has a row of most beautiful varieties forming a line in front of these. Then he has a row of Coleus in front of these, again before these is a row of Chrysanthemums, and in front of them a row of bedding Geraniums of many shades of color. So pretty is the effect of even this simple arrangement, which may be so easily improved on, that it is admired by so many as to get him many orders for similar material next season.

Another matter we saw which pleased us. There were on the lawn belts and borders of shrubbery,—but in front of these belts were Geraniums, Petunias, and Verbenas ; besides other gay colored bedding plants. Now beds of these plants are very common in flower gardens,—but this combination of shrubbery and flowers is very unusual, and is capable of very varied application. It is just these little things which cost nothing much but a few minutes study, which every nurseryman and florist might have, and which would go a long way to develope the

taste for beautiful grounds, which everywhere exists, but dormant for want of some encouragement of the kind.

Shrubs for this kind of gardening we have alluded to, should of course be of a free flowering character. Of those which can be made very effective, the following may be used: Pyrus japonica, the red and the white; Spirea prunifolia, S. Reevesii; S. Billardii; Deutzia gracilis, Scabra, and crenata pleno; Weigelia rosea and W. amabilis, Philadelphus coronarius, and P. Gordonianus; Forsythia viridissima; Hypericum prolificum; Altheas in variety; Persian, and even the common Lilacs; Tartarian and Fly Honeysuckles; Hawthorns, Double Almonds, and perhaps some others. But all these are common in most nurseries; are very easy to grow, and very pretty effects may be had at a small outlay.

Many persons who have got but a few of these plants, will like to raise some more. The end of the month is a good time to take off cuttings, unless the weather be very warm. Of those we have named all but the Pyrus and Almond will grow by cuttings. These two grow by pieces of roots. Cuttings should be made about four or six inches long, and planted out in rows, and set two or three inches below the surface of the ground. In spring planting we put them right level with the surface.

In many parts of the Northern States the leaves will have changed color previous to the incoming of winter, and the planting of trees and shrubs will commence as soon as the first fall showers shall have cooled the atmosphere and moistened the soil. Further south, where the season will still remain "summer" a while longer, the soil may, at any rate, be prepared, that all may be in readiness when the right season does come. What leaves remain on should be stripped off, and the main shoots shortened. They will then do better than if planted very late. In fact, if planting cannot be finished before the beginning of November in the Northern and Middle States, it is better, as a rule, deferred till spring. In those States where little frost occurs, this rule will not apply. The roots of plants grow all winter, and a plant set out in the fall has the advantage over spring set trees, that its roots in spring are in a position to supply the tree at once with food. This is, indeed, the theory fall planters rely on; but in practice it is found that severe cold dries up the wood, and the frosts draw out the roots, and thus more than counterbalance any advantage from the pushing of new roots. Very small plants are, therefore, best left till spring for their final planting. It is however an excellent plan to get young things on hand in fall, and bury them *entirely with earth*, until wanted in spring. Such things make a stronger growth the next season, than if just dug before transplanting.

Those who have no greenhouse, and yet are desirous of preserving many half hardy plants through the winter, employ *cold pits*. Choose the dryest situation in the garden, and sink about five feet in depth. It is important that no water can be retained at the bottom. The pit may be of any length required, and about five feet wide, so as to accommodate six feet sash. The inside of the pit may be built up of boards, or, if something more durable and substantial is required, brick or stone. The body of the frame may be built up a few feet above the level of the surrounding soil, and the earth which comes from the pit be employed in banking up to the upper level of the frame. Shelving should be made for the inside so as to extend from the base of the front to nearly the top of the back, on which to place the plants in pots. In the space which will then be under the staging, hard wooded and deciduous plants, as Lemon Verbena, Fuchsias, &c., may be safely stored, while the more succulent kinds are shelved overhead. The plants to be preserved in such a pit should be potted early, and be well established and healthy before being pitted; much of success depends on this. The less water they can be made to live on without withering through the winter the better they will keep. Straw mats must be employed to cover the glass when freezing time commences, and when the thermometer is likely to fall below 20°, straw or litter should be thrown over. Board shutters are also excellent, as it keeps the snow out from the straw and litter, which sometimes makes the mats very awkward to uncover when we would like to give air. Very little light or air will be required through the winter, when the plants are not growing. If a good fall of snow cover the pit, it may lie on undisturbed for two weeks or more without injury. When a warm dry day offers the sashes may be raised if convenient, to dry up the damp. Many kinds of border plants can be kept over winter this way with little trouble.

Continue seed saving, remembering that the earliest flowers on a plant produce the best seeds. Biennials, such as Hollyhocks, Carnations, Snap Dragons, Pansies, and so on, should

be sown during this month. They are quite hardy. A few branches or corn-stalks thrown over during winter, to keep the thaw from heaving them out of the ground, is all the protection they require. Hardy annuals, to flower early and fine next year, may be sown now. Tulips, Hyacinths, Snowdrops, and Crocus to be planted as soon as they can be procured. Light rich sandy soil to be employed. Gladiolus to be taken up as soon as the leaves fade, and carefully dried, labelled, and put away secure from frost. The same with Tuberoses, Tigridias, and so on towards the end of the month. Divide herbaceous plants. Plant evergreens, and deciduous trees also, for that matter, as soon as the fall rains have moistened the ground. If the leaves have not fallen cut them off with the immature shoots.

VEGETABLE GARDEN.

The main crop of Spinage should now be sown. Properly cooked, there are few vegetables more agreeable to the general taste, and few families who have gardens will wish to be without it. It is essential that it have a very well enriched soil, as good large leaves constitute its perfection as a vegetable. As soon as the weather becomes severe, a light covering of straw should be thrown over it. A few Radishes may be sown with the Spinage for fall use.

Turnips also may still be sown. In fact, if the soil be rich, a better quality of root for table use will be obtained than if sown earlier.

Celery and Endive will still require the attention in blanching described in former hints.

Cabbage and Cauliflower are sown this month for spring use The former requires some care, as, if it grow too vigorous before winter, it will all run to seed in the spring. The best plan is to make two sowings—one early in the month, the other at the end. The rule is get them only just so strong that they may live over the winter in safety. Many preserve them in frames; but they should have wooden sashes or shutters instead of glass, so as not to encourage them to grow much.

Cauliflower, on the other hand, cannot well be too forward. Most persons provide a pit of stone, brick or wood, sunk five or six feet below the surface of the ground, into which leaves, manure, or any waste vegetable matter is filled. When quite full, it is suffered to heat a little, when it will sink somewhat and have more material added to it; about six inches of good rich loam is then placed on it, and early in November the Cauliflower planted out. The object in refilling the leaves so often is to insure the plants remaining as near the glass as possible, which is very essential in the growth of Cauliflower. Lettuce is treated in the same way, and seed should be sown now to prepare for the planting. The Cabbage Lettuce is the kind usually employed.

FRUIT GARDEN.

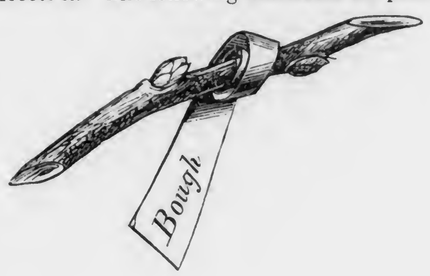
It is very strange that people will continue to grow trees year after year without any fruit, and yet praise their systems as the best possible one against any thing else that can be done. We have contended for years that fruit culture will never be successful until some very different system than that usually praised shall be adopted. The ground must be so dry to grow good fruit that water will not lie 24 hours *in summer* (in winter it is of no consequence) without passing away; the fibrous roots must be kept *as near the surface* as possible and kept shaded from the intense heat of summer. Then they must be kept highly fed by occasional dressings of surface manure. These are the principles without which, depend on it, American fruit culture will, with occasional exceptions, always be a failure. Yet there are many men who are incapable of getting an idea, and who think they have it all in the dress with which for the sake of illustration, one has to clothe the idea. They seize on this dress as sly dogs seize on the legs of ones pants; and run off rejoicing that they have tore out a great piece of ones leg, when really they have gone away with but a few rags in their mouths. Thus one hears it over and over again repeated that the *Gardener's Monthly* recommend starving trees in neglected grass orchards. Our readers know better.

We went to see an orchard which has been formed by one of our readers in Germantown, a few days ago. His lot is only 60 by 170 feet. It was so dry and stoney that in working it up for his orchard, he took out several loads of stones; he manured, it and then got 75 peach trees from one of our advertisers, John Perkins, of Moorestown, and planted the lot. He put rather a high pale fence around it, and built a chicken house at one end. The birds have free use of the lot. There are about 25 on the average kept. This was seven years ago. The trees have been bearing regularly for the last five years, and this year

they will probably yield 50 bushels of fine fruit; and this in spite of curculios which destroy many, and which our friend insists chickens will not eat. The trees are in the highest state of health, and there is nothing to indicate that the trees will not live and bear for many indefinite years. *Nothing whatever* has been done to this little orchard since it was planted. The ground is naturally dry, and the trees are so thick together that short grass is not necessary to grow between them to get the cool shade so agreeable to the roots; what little green matter does grow, the chickens eat, and the surface is as smooth as a paved yard. The manure the birds make is an excellent surface fertilizer, and thus we see every condition which we hold necessary to good fruit culture exactly fulfilled. We believe there has been an average of twenty bushels per year from these trees for the last five years. This is not a great deal perhaps from 75 trees; but when any friend of the old rooting up and fussing about system can show a similar result from 9000 square feet, we want to go and see that orchard.

The planting of the Pear, Apple, Plum and Cherry will soon be in season; Peaches, Apricots and Grape Vines, except south of the Potomac being for the most part left till spring. Choose a dry piece of ground. If not naturally dry, it is best to throw the earth up into banks or ridges and plant on them. This is cheaper and better than underdraining. In planting, if the roots appear deep, cut away some of the deeper ones, and shorten some of the top of the tree at the same time. This is particularly true of dwarf Pears which are often grafted on rather long Quince stocks. Cut all away of the quince root but about six inches, and if this should be found to leave few roots, cut away the top correspondingly. Most of the failures with dwarf Pears come from bad quince roots, so deep in the ground the lower parts decay, and this decay gradually communicates upwards until the whole system becomes diseased. The more tenacious the subsoil the more necessary is it to attend to this matter. We spoke of pruning in proportion to injury. It will be found that all trees are a little injured by removal, therefore all trees should be a little pruned at transplanting.

One of the most interesting features of fruit growing is to have the name. One of the simplest and best methods is the plan proposed in the second volume of the *Gardener's Monthly* of writing with a common lead pencil on a piece of zinc We have some which have been in use ten years, and the writing is blacker and plainer than when first done; indeed it can be scarcely traced when first written. A triangular piece is used, and the narrow end coiled once or twice around a branch, as the girth increases the zinc opens, if it does happen to get tight, a moment soon corrects it. The following illustrates the plan.



COMMUNICATIONS.

COMMON GARDEN FLOWERS.

BY JOSEPH AMRAM.

The Wallflower.

Making a voyage to England some years ago, I took passage by the *Hammonia* and landed at Southampton. Wandering up the main street I came to the ruins of what appeared to be the ancient gates of the town, which formed an arch over the road. My companions were interested in some story of "Gog and Magog" with which these ruins had some connection, but it was all lost to me through admiration of the beautiful *wall flowers* which grew out of the old mortar in every direction. The wall flower was always a favorite with me. From my earliest attempts at greenhouse culture I had never been without them; but I never had the slightest idea of their great beauty until this day. Since then I have seen them on many a "Castle wall," and many a crumbling ruin of other kinds; but they never lingered in my heart like as do the wall flowers of that day.

I never learned till then why they were called wall flowers. Linnæus when he gave things botanical names, called this *Cheiranthus Cheiri*. My Greek has gotten somewhat rusty since my college days; but I suppose the signification of

Cheiranthus must be "Hand flower," but unless it be that this plant requires no more earth to grow in than one might hold in the palm of one's hand, I do not see the application.*

Certainly the poorer the earth the finer are the individual blossoms, and yet I have found that nature is not the best guide always to follow; certainly not in the wall flower, for very superior specimens can be had by a very little care and attention with good rich soil. Those which we see in windows and greenhouses are usually double, and as these are raised from cuttings usually of one or two tints,—but wild they are of every shade from deep golden yellow to a crimson brown

Single ones are not very common with us, chiefly I think because people do not know how to manage them from seed. The best way is to sow them late in spring—in the latitude of Maryland June is the month—in any good garden ground. as soon as the plants are two or three inches high transplant them to a good rich border, pinching out the central shoot, of course ladies know about this transplanting business, that it should be done in a dull day or during a shower, or else well watered and shaded or else they will wither away,—and any gentleman who does not know can ask his lady friend who will be glad to instruct him. By fall these will be nice bushy plants, and having been once transplanted, will move into pots very easily. In Maryland this way may done in October. As soon as the plants are potted water well, and keep under a shady hedge or wall for a few days; after that they are ready for any window, greenhouse or cool pit intended for them. They will then bloom in March and April, giving besides a rich show of blossoms, a delightful perfume, which most persons enjoy. It seems strange that these plants should be natives of England and grow there in cold poor bleak places, and yet not be hardy in the middle states of America; yet so far as my experience goes they always get killed, unless the plants are bent down and covered with earth till spring. I have heard of some which have thus been wholly buried, which have lived very well through the winter, but this is not of my own observation. Having a small cold pit, besides a greenhouse, I keep them very well there.

Somehow the double ones are much more admired than the single ones. I never knew why. They are rarer and more difficult to keep, and therefore may be reasonably more valued; but certainly they are not so pretty. Yet we can make prettier plants of them than of the single ones, as they naturally grow more bushy. These double wall flowers make no seeds so must be increased solely by cuttings. The way I do this is to take the plants just before the flowers are quite faded, and cut them back pretty severely. The pieces I cut into lengths of about six inches, and plant them down nearly their own length in a partially shady place in the garden border. They make very nice plants by October, when they are taken up, potted, and treated the same as for the single ones.

I do not know any plant which will give so much satisfaction for so little trouble as the wall flower,—and if there are any of your lady readers who have never grown them, let them take the advice of a man grey headed in amateur gardening, and get a few just to try.

* The name is said to be *Arabic* for *Red sweet flower*.—ED.

RECIPE FOR POTATO BUG.

BY LEWIS A. LEE, CHICAGO, ILLS.

I here enclose you a recipe for the destruction of the potato bug. For an acre take 2lbs. of Paris Green; mix with 16 quarts of wood ashes. Spread this on finely while the dew is on the plants. I obtained a situation here where every body ridiculed the idea of growing potatoes, on account of the great number of bugs that infested the fields. But my potatoes are as healthy and free from insects now as any of my neighbors, although they were almost covered with bugs when they first came up. I applied it to them twice. It costs 4 cents a pound, and can be had at any paint shop or drug store.

VIBURNUM PLICATUM OR JAPAN SNOWBALL.

BY JOHN SAUL, WASHINGTON, D. C.

I was much pleased with your remarks on this beautiful shrub in your last number—strange to say some of our most valuable plants should be a considerable time in working their way into notice—my specimen plants of this I have had some ten or twelve years, blooming beautifully from the first season it was planted—it blooms quite young—the flowers as you well remark, are of "a pure paper white" and the habit of growth is far superior to the old variety Viburnum Opulus. I consider it as superior to the old variety as it is possible for a shrub to be. The old is a thin, lanky growing plant, rarely to

be had bushy or well furnished, whilst this new variety is the reverse, its habits is most compact and bushy, with its lower branches resting on the ground, and a pleasing outline. It is of moderate size, never attaining the height of the old variety and consequently very suitable for small gardens. I will now offer to cultivators another beautiful snowball, Viburnum Macrocephalum, not new by any means, as it was introduced by Mr. Fortune during-his first expedition to China, over 20 years ago. My specimen plant, like the others I have had some ten or twelve years, blooming beautifully every spring. I have described it in my catalogue as giving heads of blooms as large as a Hydrangea. Some may feel disposed to smile at this, and to suppose florist like I imagined this beautiful shrub, larger and finer than it really is, but annually as spring comes around it gives its magnificent blooms, which satisfies me I have not drawn on my imagination for a description. This is a distinct species from either of the others, —of moderate growth and good habits.

FALL TRANSPLANTING AND ORDERING OF STOCK.

BY WALTER ELDER, PHILA., PA.

There is much gained in fall transplanting under suitable circumstances. Where there is a convenience to properly prepare the grounds, and do the work of transplanting and the after needful care in a judicious manner, or where the lands are in a tilled state. They should first be deeply dug or ploughed ; or if in grass, dig the holes larger, pulverize and enrich the soil better, and mulch all trees and shrubs for the winter to prevent the heaving of the ground by frosts, which often draw plants almost out of the ground. But upon stiff, flat, undrained lands, and where there are other hindrances in the way, then better defer the transplanting until spring, when the soil gets friable enough to work freely.

In fall men can be more easily hired, and the hands upon the place are more at leisure. The soil is in a better state to work, and men are more active and do much more work. The soil under the surface is warmer than the atmosphere; and by early transplanting plants make numerous fibres, which mature themselves into lasting roots before winter sets in ; and when spring comes, they push out abundance of new fibres, which cause vigorous growth; all of which is readily observed in Strawberries and Evergreens that are set out in September, in the latitudes between New York and Washington ; so we advise all to do now the transplanting that can be judiciously performed. The mulchings for trees and shrubs, may be manure or straw, tan bark, sawdust, tree-leaves mixed with leaf-mould to prevent being blown away by high winds. Sumac bark from morocco works and spent hops and grains from breweries, are excellent for winter mulching and fertilizing strawberry beds, and for all other berry-bushes.

Many improvers inflict grievous disappointments upon themselves by sending late to nurseries for their stocks. They do not make up their minds what they want until "the eleventh hour," and then send off their orders expecting them almost by the return mail. Day after day they impatiently look for their goods to come, or notice when they are to be sent.

Now suppose that a nurseryman has five hundred orders on hand ; all recorded in the order books, with the dates of their reception, and to be executed in the order that they are numbered in the books. If the order is number 501 would it be just to neglect the five hundred to immediately execute that ? It must wait its turn. Every body should send their orders to Nurserymen two months previous to setting the plants out, and then state when the different classes of stock are wanted ; and they will be delivered accordingly ; and there will be no loss of time or disappointments Nurserymen getting previous notices, label the plants in the nurseries ; and that saves time and mistakes. They also know how many extra hands to employ to fill the orders when their time of delivery comes on. Improvers know when their stocks are to come, and every thing goes on like "clock work," both with nurserymen and planters, and satisfaction on all sides is the result thereof.

NEW JERSEY LANDS.

BY * *

I noticed some months since, an invitation for some of the "ten acre" men to give some facts as to how the thing worked practically.

I tried it on twenty acres for a little upward of two years on the sands in Burlington Co , N. J., and I am fully satisfied that ten acres *is* enough, for any ordinary man, unless he could have an Astor or other millionaire lie at his back ready to roll out the greenbacks to buy Philadelphia manure at the rate of $1.50 per cart load—a wheelbarrow load would be nearer the amount received. You can grow no sort of crop in those sands without heavy manuring, and it would be some consolation if one was tolerably sure of a crop after manuring, which is not the case, as the failures are about as certain as the crops.

I doubt whether there is a harder working class of men anywhere to be found, than the Jersey truckmen. They are at it from Monday morn till Saturday night, early and late ; rain or shine, hot or cold, no matter. Nearly every man who goes there gets cheated. He has read "ten acres enough," and the large yield of berries which find their way into the papers, and he goes to work and figures up and applies the "rule of three" and the result is the figures look well and he's bound to try it. The growing of Strawberries on those sandy soils is "played out" so far as making it pay is concerned. I sent several chests of strawberries to the Philadelphia market one day last season, (1868) for which I paid three cents per quart for picking, they were sold by my commission men for four cents per quart. This is the side of the profits of strawberry culture that hardly ever finds its way into the columns of newspapers and magazines, and especially such works as T. A. E. There is good land in Burlington Co., but you will not find it when there is no bottom to the sand.

If this finds its way into print, and any of its readers go to N. J. to buy, I advise them to keep their own wits about them, and not believe everything that some sanctimonious sharper may chance to tell them as I did, and got bit of at least $60 per acre on every acre I bought. We have such men everywhere, and among speculators especially.

If manures were cheap so that a man of ordinary means could buy them in large quantities he could make a "good living" provided himself and family were able to keep genuine or "Ague Pills" on hand in sufficient quantities to keep them on their feet.

[According to our rule of giving an impartial hearing to every one who sends us communications under responsible names, we insert this article.

There is no doubt that works like "Ten Acres Enough" have done great injury by passing off romances as things which have been actually accomplished, leading hundreds to leave tolerably comfortable circumstances, for what proves ultimate ruin. But this occurs all over the Union; and ought not to prejudice locality. On the contrary we believe that with the proper kind of knowledge and capital one may do as well in the New Jersey settlements as in any part of the world.

People should know that pioneer life is always a hard life, taxing health and strength alike severely ; and whether we go out to fight the bush in Kansas or New Jersey, only the strongest and most determined succeed.

Thousands have done well and can do well in New Jersey ; but it is not right to hold up the place as a second paradise, and make everybody believe that they are to lie on beds of roses, untroubled by thorns. These romance writers must not complain when reaction such as * * exemplifies sets in to their injury.—Ed]

ON THE LEAVES OF CONIFERÆ.

BY THOMAS MEEHAN, PHILA., PA.

Botanists can scarcely have overlooked the fact that the true leaves of *Pinus* consist of bud scales ; and that what are known as leaves, and what Dr. Engelman (Gray's Manual, fifth edition, p. 469) calls "secondary leaves," are but phylloid shoots, but I have failed to find any specific reference to the fact in botanical works. Dr. Dickson, however, in a paper on the *Phylloid Shoots of Sciadopitys verticillata* ("Proceedings of Botanical Congress," 1866 p. 124) remarks, "In *Sciadopitys* I have to call attention to the fact that the leaves of the growing shoots consist, as in *Pinus*, entirely of bud scales." One would suppose from this incidental reference to *Pinus* that he was acquainted with the fact that the so-called leaves of *Pinus* were phylloid shoots ; but as the object of the paper is to show that the so-called leaves of *Sciadopitys* are not true leaves, and as any one must know that they are not if already cognizant of the fact in *Pinus*, we may take it for granted that at any rate if not entirely overlooked, little thought has been given it. I believe I am occupying an entirely original field in pointing out the true nature of leaves in *Coniferæ*, and that the increased knowledge will have an important bearing on many obscure points in their study.

Dr. Dickson uses but the language of general botany when he describes the true leaves of *Pinus* as "bud scales," meaning thereby the scaly free portion just under the "secondary leaves," of

Engelman, and sometimes forming sheaths around them. But these free scales are scarcely leaves. The chief portion of the true leaves in most plants of the order are adnate with the stem. Sometimes they have the power to develop into scaly points, at others into foliaceous tips,and at other times without any power but to preserve their true leaf like character. *Larix* affords the best illustration. The true leaves are linear spathulate, entirely adnate to the stem. There are two kinds of stem growth on *Larix*. In one case the axis elongates and forms shoots ; in the other axial development is arrested, and spurs are formed. On the elongated shoots the leaves are scattered ; on the spurs they are arranged in whorls The power of elongation possessed by the shoot is imparted to the leaves which are adherent to it, and they produce green foliaceous awl-like tips; the power of elongation which the spurs have lost is also measurably lost to their leaves, they develop themselves fully, although they have no stem to adhere to ; they preserve their spathulate form, but cannot produce the awl shaped tips of the shoot leaves. There are, therefore, two forms of leaves on the larch, the one free, the other adherent ; and we have a novel principle very clearly illustrated that *strong axial development* (vigor) *is a characteristic of adhesion, while the reverse* (weakness) *is characterized by a free system of foliation.* Any species of *Larix* will sustain this observation ; and, *L. leptolepis*, as a vigorous grower is the best.

The characteristics of the foliage described in *Larix* may be found in a greater or less degree in a great many species of coniferous plants. In *Cryptomeria* the leaves adhere for four-fifths of their length on vigorous shoots ; but on the more delicate ones they are free for three fourths or more. In *Juniperus* the different forms of foliage are well known, especially in *J. Virginiana*, *J Chinensis*, and *J. communis*. On the vigorous shoots adhesion takes place for nearly the full length of the leaves, but on weaker ones the leaves are very nearly free. In *Thuja*, *Biota*, *Retinispora*, *Cupressus*, *Thujopsis*, indeed most of the Section *Cupressineæ*, these variable degrees of adhesion may be found, and always in relation to the absence or presence of vigor ; and on this question of vigor, it will be well here to make a few remarks. The power to branch, I take to be a high mark of vigor. The young seedlings of most coniferous trees grow but a few inches the first year and have no power to branch. The power increases with age. and in all cases in proportion to the vigor of the plants. In *Thuja*, for instance, no branches appear till the second year. They increase in number, until, when in its prime. branches appear from every alternate pair of axils, and, as these are decussate, this gives the fan-like form of growth of which the Arborvitæ affords a familiar illustration.

This varying power of adhesion in the true leaves, and in connection with vigor enables us to explain many matters hitherto not understood. For instance, Dr. Lindley describes a form of *Biota* as *B. Meldensis*, suggesting that from its appearance it must be a *hybrid between the Red Cedar and Chinese Arborvitæ*. It is but *B. orientalis* with the leaves moderately united. *Thuja ericoides* of gardens was long supposed to be a Japanese species ; it is but an entirely free-leaved form of *Thuja occidentalis*. *Retinispora ericoides* of Zuccarini is but a free-leaved form of some Japanese plant ; and in all probability many species of *Retinispora* so marked in herbariums, are all forms of one thing with more or less adnated leaves. In all these cases delicacy of growth and freedom of leaves go gradually together as before indicated.

One of the most remarkable instances of the value of this principle however, will, I have no doubt, be in fixing the indentity of the Japanese genus *Glyptostrobus** of Endlicher, with the American *Taxodium* of Richard. In a shoot one foot in length of the latter we find perhaps four or six branchlets ; in the same space in *Glyptostrobus* we shall find a score or more. Indeed, in this plant, a branchlet springs from nearly every axil on the main branch, showing an extraordinary vigor. As vigor is opposed to a free development of foliage, the small thread-like leaves of *Glyptostrobus* are naturally to be expected, and the free leaves distichously arranged is the natural concomitant of the weaker *Taxodium*. Fortunately I am able to sustain this theory by actual facts. I have a seedling tree ten years old of remarkable vigor. It does not branch quite as much as the typical *Glytostrobus*, but much more freely than any *Taxodium*. The result is the foliage is aciculate,not distichous, and just intermediate between the two supposed genera. But to help me still more, my tree of *Glyptostrobus* has pushed forth some weak shoots with foliage identical in every respect with the intermediate *Taxodium*. Specimens of all these

Note by the proof reader,—It was the intention of the author to refer his remarks on Glyptostrobus to *G. Sinensis*, Endl.

are presented with this. In establishing *Glyptostrobus*, Endlicher notes some trifling differences in the Scales of the Cones between it and *Taxodium*, but all familiar with numerous individuals of some species of *Coniferæ*, *Biota orientalis* for instance, know how these vary. There can be no doubt, I think, of the identity of the two ; and this will form another very interesting link in the chain of evidence, that the flora of Japan is closely allied to that of the United States.

If we were to look on the so-called leaves of *Pinus* and *Sciadopitys* as true leaves, we should find serious opposition to my theory that a vigorous axial growth is opposed to the development of free leaves in *Coniferæ*, for we should see a class of plants which notoriously adds but from three to six branches annually to each axis, clothed with foliage. But admitting them to be phylloid shoots, it confirms our theory in a strong degree. We then see a plant loaded with branchlets, and so great is the tendency to use them instead of leaves, that in some cases as in *Pinus strobus*, *P. excelsa*, and others of a softer class of *Phylloideæ*, the bud scales are almost entirely confined to the sheathing leaflets ; just as in the very rugged,hard leaved,almost spinescent forms, like *Pinus Austriaca*, we find them more dependent on well developed adnate leaf scales. *Abies* of old authors, *A. excelsa* for instance, we have a numerous branching tendency ; hence we have true leaves though partially adnate, and no necessity for phylloid branchlets. In *Picea* of Link, almost near *Abies*, taking *P. Balsamea* as a type, we have a rather weaker development, slower growing and less hardy trees, and the leaves are nearly free. Could some of the shoots of *Abies* be arrested in their axial development as in *Larix*, we should have the remainder increased in length, and the fewer branchlets, and two forms of leaves just as in *Larix*. Should, on the other hand, the plant increase in vigor there would be no class of free leaves; adnation would be the law, and metamorphosed branchlets prevail. Starting from *Abies*, extra vigor makes the Pine ; extra delicacy the Larch. It is the centre of two extremes.

That the fascicles in *Pinus* are phylloid shoots I think cannot be questioned. Their position in the axils of the true leaves, as beautifully shown in *Pinus Austriaca*, indicates the probability. Their permanency in proportion to their induracy is also another point. The soft ones of the Strobus Section retain vitality little longer than some true leaves, while the spinescent ones of *P. Austriaca* remain green for four or five years. But the strongest of all points is that on dissection of an old fascicle it will be found to have a distinct connection with the woody system of the tree, and that these minute woody axillæ under each fascicle, increase in size with the age of the sheath. With a very little encouragement these woody axillæ can be induced to elongate and become real branchlets. If the leading shoot, for instance of a Pine be tipped in May just after pushing, bulblets will form in every fascicle below, and the next season, the bulblets will produce weak branchlets,, although this might be said of true leaves, which are supposed to bear an embryo shoot in the axil of every one. So much stress need not be put on this fact as the others are sufficient. It is introduced, and its weak nature commented on, as it furnishes the chief point in Dr. Dickson's argument for *Sciadopitys*, which amounts to little more, than that the apparently single Phylla is really a double one—a two-leaved fascicle united by a transformed sheath through its whole length. Carriere has since pushed Dr. Dickson's observations farther by noting in the "Revue Horticole" really bifid leaves, with little verticils in the axils (see reference in "Gardener's Chronicle," May 2, 1868) an observation which I confirm by a specimen exhibited herewith ; yet as I have said it is by itself not wholly free from the objection that it may be but a modified form of regular bud growth ; but together with my other observations I think they do serve to confirm the point of these so called leaves being but phylloidæ.

In conclusion I will restate the main points of this paper :

The true leaves of coniferæ are usually aduate with the branches.

Adnation is in proportion to vigor in the genus, species, or in the individuals of the same species, or branches of the same individual.

Many so called distinct species of coniferæ are the same, but in various states of adnation.—*From advance sheets of Proceedings of American Association for advancement of Science at Chicago*, 1868, *Section B, Natural History.*

EDITORIAL.

THE GLANDS OF PEACH LEAVES.

It is interesting to note how slowly knowledge progresses. It is now many years ago that Lindley wrote of Peach Glands: "The reniform glands grow also on the foot stalks of the leaves, but those on the leaves are placed within the serratures, connecting as it were, the upper and the lower teeth of the serratures together; their leaves, when taken from a branch of vigorous growth have more glands than the leaves of the globose varieties. It will however sometimes happen that the glands are not discernable in some of the leaves, especially on those produced on the weak branches."

Now if we inquire what these glands are, we find that they are nothing but the *undeveloped germs* of the *matter which composes the leaf blade;* and we see that in proportion as the shoots loose vigor, the glands or leaf blades are developed.

This has a new interest in its relation to a paper read before the American Science Association on the leaves of coniferæ, by the Editor of this Journal, and which we give from advance sheets of the "Proceedings" in another column. It will be seen from that, that the leaf blades of Pines and allied trees are less developed just in proportion to the vigor of the shoots; so, remembering that glands are but undeveloped blade matter, it shows the same law in the Peach as in the Pine.

Now vigor of the shoots is not always a sign of *high vitality*. This we have often shown when replying to those who ask us if digging about, and thus destroying the surface roots of trees, does not "make them grow?" The fastest growing child, or the fastest man will often give up to disease long before your scrubby, or "raw boned" illustration. Vegetation is but one form of vital force. Yet so far as it goes, strong growth is a type of vital strength, as a puny growth is of weakness. The practical interest of this Peach Gland question centers here. If the tree is otherwise healthy, and this theory be true science, those varieties which have the leaf blades the most undeveloped, that is to say those which have the largest and greatest number of glands on the leaves should have stronger vital powers than the rest, and be better able to resist diseases. Without ever explaining this theory to any one that we remember, but Dr. Morse of St. Louis, we were very much interested by being told by Mr. Flagg, Dr. Hull and others at Alton that they had found by long experience, that the fewer glands on the Peach or Cherry the greater was the susceptibility to disease; and we do not know of a more interesting case of Science and experience meeting together so exactly, from opposite directions of travel, at one and the same time. It would be very interesting to have the detailed experience of the Alton fruit growers as to what kinds of diseases they have perceived, and the names of the varieties they have noted the diseases the most prevalent on; and also it will be interesting to have the experience of growers in other sections of the country.

FRUIT OR ORCHARD HOUSES AND GRAPERIES.

We often hear it said that it is foolish to have fruit houses in our country because, "having all sorts of climates" and "cheap and rapid transportation" we can grow every thing "naturally," and art is useless.

English papers, of recent date, afford a curious commentary. Under glass English grape growers can beat the world, notwithstanding the "sunny clime of Italy" is supposed to be the "home of the grape." Some remarkable fruits were sent from the Garston Vineries to the Queen. The Pope seems to have heard of them and expressed a desire to see some of them. They were sent accordingly, though so late in the season as the *eighteenth of March*, Lady Downe's variety, weighing 3 to 4 pounds each. They were three weeks in reaching Rome, yet were so astonishingly fine, that the Pope wrote a special letter of thanks to Mr. Meredith, acknowledging their great superiority.

No one after this need be afraid of sending "coals to Newcastle." We often wonder that with the ease with which fruits can be raised under glass, and its great superiority to "natural" fruit, that there are not more fruit houses.

BUIST'S VARIEGATED AL

Very few variegated leaved plants stand successfully against our summer's sun. Almost every thing that has been tried fails. The constitution of all such things is weakened. Variegation is not perhaps a disease, but it is certain that all have a lessened vitality; that is, have a weaker hold on life. If the variegated box or the variegated Euonymous are planted side by side with the green leaved forms, it is seen that they never get so tall; and if a severe winter arises, the variegated ones are the first to succumb to the extra cold. So also with the heats of summer, they are the first to give out. Of all these plants, however the variegated Althea stands well. It does not grow as strong as



[BUIST'S VARIEGATED ALTHEA.]

the green-leaved forms, and it may perhaps not be as able to stand some extremes as others; but so far as we have seen neither the summers or winters of this part of Pennsylvania injure it.

As an ornament to the lawn few things surpasses it; but its chief value lies in making beautiful ornamental hedges or screens. The common Althea is very much used for'; ur·

pose, as they make a place very gay during the summer months, flowering from August till frost, no matter how severe the trimming may have been. There is a great variety of colors among them, White, Pink and Purple, with many shades between. There are also double as well as single varieties. This variegated kind is double purple.

The Althea is easily propagated either from cuttings or seed—The former may be planted in the Spring, and will often root so strong as to flower the same year. Seeds may be sown in Spring, and will flower the second year. They seldom come the same color from seed. This is the way that new varieties of course, are raised. The Althea is a native of Syria, but is very much at home in the United States. The double purple variegated was raised by Mr. Robert Buist of the Rosedale Nurseries, about fifteen years ago. Like all variegated plants it is rather slow of increase, so that it is not yet common.

HORTICULTURE ABOUT ST. LOUIS.

We suppose our readers know that St. Louis aspires to be the Capital of the Nation. Whether that will ever or not come to pass, one thing is certain, that the aspiration leads to a desire for eminence in all things. In matters of art especially a Capital is nothing if not excelling; and no doubt with other arts, the art of gardening will flourish. If, however, St. Louis is to rest its claims to superiority on these grounds, it will have to brighten up. Gardening hardly has an existence there as a branch of the fine arts; yet it is not by any means behind other western cities, but perhaps superior to most There are some pretty places, small but well kept. The town garden of Mr. D'Oench is quite a model in this way; more than this, in fact, for it is a model of good taste as well.

There is a very active Horticultural Society here; but chiefly devoted to the culture of fruits, and with little attention to the finer branches of the art. In this respect there is nothing near the city, if indeed in the Union, which will compare in interest with the Missouri Botanical gardens of Mr. Henry Shaw, and it is a good sign for the future of garden art in St. Louis, that Mr. Shaw's great liberality is appreciated by the people. Citizens of every class seem to speak of this garden as of something they take great pride in, as it is generally known Mr. Shaw will leave it to the city at his death. Every thing that is carried out in the garden is done with this view. The Botanic Garden, as its name implies, is an offering to science rather than to art—to Botany rather than to Horticulture. Artistic effect has therefore not been so much studied, as to provide a convenient garden, where every thing suited to the climate can be grown. Fifty acres are devoted to this purpose, and the part used for flowers enclosed by a beautiful stone wall. This flower garden is a paradise of beauty. The beds were gay with blooming flowers; the the belts profusely filled with all the hardy shrubs that could be obtained,—the lawns and gravel walks as neatly kept as if they were the well ordered departments of a house under a woman's care, than something in the outer world. The plant houses have all been remodelled within the past two years, are beautiful structures, and are replete with Palms, Ferns, and other matters of tropical interest. The amount of money spent on the grounds and collections during Mr. Shaw's past life, must have been very great. The two past years have swallowed seventy five thousand dollars. Mr. Shaw has however, wisely provided that the support of this liberal donation to the city shall be at no cost to it for maintenance. He has set apart a tract of land valuable now, and which will grow into an immensely increased value with time, which is to be improved and let on long leases, the income of which is to be a supporting fund to the garden forever. In addition to this, Mr. S. has donated a tract of 200 acres not far from the garden, for a public park. The city has accepted it, and the improvement of the ground is now in progress. It is a narrow parallelogram over two miles long, and about the eighth of a mile wide. This form, with some disadvantages has many good ones; not the least of which is that the same extent of ground is spread further through a city than if it were square, and thus being brought near to people's homes prevent much of that sectional feeling, which always prevails more or less in every city when a park is spoken of; and which sometimes goes so far as to defeat schemes of acknowledged public good, because one individual will reap more benefit than another,—and which is satisfied to have nothing if not the impossible idea of "share and share alike." St. Louis, like other cities, seems to have a park fever, as other localities are seeking to have them; and one, the Lafayette—a small one of about 20 acres—was about having

the finishing touch applied to it in the shape of a very cheap, yet very pretty, though somewhat too light, iron fence put up all around it. The trees and shrubs have been planted some years and are now in excellent condition for enjoyment. We heard great complaints from leading citizens that this park has cost considerably more than it ought; but about this we were unable to judge, We can only say it is a much prettier specimen of landscape gardening than city parks usually are, and is a credit to the city of St. Louis. It is evidently much appreciated by the citizens, as on the afternoon we saw it, it was crowded with people; and we could not but feel as we saw enjoyment seated so cosily on every countenance, that if ever the mass of a people get any return for the thousands dragged out of them by taxation, it is in these beautiful public parks.

In fruit growing St. Louis and vicinity stands high,—especially in the growth of the Peach and the vine. We think we never saw healthier or more productive grapes than at Mr. Jordan's in St. Louis, and on the grounds of the Bluffton Wine Co., on the Missouri river above the city. On the deep sandy bottom at Bluffton, particularly, the health and vigor of the plants, and the promising crops of fruit on them were wonderful to behold; on the high lands where the water stands longer, they were not quite so fine, but equal to any we have seen anywhere. For successful management over a term of years, however, we were very much pleased with Mr. Jordan's. We noticed how fine they were two years ago, now they are still finer than they were then. The great success is no doubt in the first place owing to the exceedingly good soil, which is dry enough to walk over without muddying ones boots an hour after the longest rains. Then Mr. Jordan's system is undoubtedly a good one, sloping the trellis so that all the leaves from the bottom to top get some light; and besides, this system shades the ground from the sun where it is not wanted. Then the pruning is good, a new shoot is brought up annually from near the ground This in many cases, would be a weak affair; but from the bearing vines Mr. J. allows no laterals to grow after the first main leaves are formed. These leaves—and fine large leaves they were,—as large as moderate rhubarb leaves, remained on, healthy, till the crop was ripe. We don't know about the profits of grape growing; but it does seem to us that if anything is to be made from this culture, such crops as these,—now the fifth successive one—ought to be worth some exceeding great reward.

The Pear fire blight is probably more destructive about here than any part of the Union; though singularly enough, very old trees and very young ones do not seem as liable to it, as trees from five to fifteen years. A corresponding disease in the apple, which was first noticed as existing in the west, in our volume for 1867, is making terrible headway. The farther we went west, the more it seems to be. We noticed a few cases so far east as near Pittsburg, but none anywhere this side of the Alleghany river. Its nature is precisely like that of the Pear, and is no doubt a closely allied fungus; but not probably quite the same, as we could not see that very large branches were attacked as in the Pear. We saw no branches over four year old, killed by it. When, after years of doubt amongst skilled Horticulturists, the *Gardener's Monthly* clearly showed that this disease was of fungoid origin, and like other funguses could only spread much by spores, the fact was received incredulously, by the great body of fruit growers. But now it is become a fixed article of faith in the creeds of the best fruit men, there is no excuse for not cutting away the diseased shoots and burning them before the spores mature. This should be particularly attended to by those who have but a few trees attacked. Let us keep this apple blight from crossing the Alleghanies if at all possible.

SCRAPS AND QUERIES.

JUDAS TREES.—There are very few more beautiful ornaments of our gardens, than the Judas tree. There are three species: one American, (*Cercis Americana*), another from South of Europe, (*C. siliquastrum*), and the third Japan, (*C. Japonica*). The flowers come out of buds formed on the old wood, just as thorns come out of Honey Locust, which it is somewhat botanically allied to, and continue to bloom from these buds on the old wood for many years. These buds open before the leaves, and give the shrubbery borders a gay appearance in early spring. The European has the darkest flowers, but the plant is not so vigorous in our country as the native American.

which grows to the size of an average plum tree with age.

The Japan is of recent introduction. Its flowers are larger and showier than the other two, of a paler and more delicate texture, and it blooms when quite small. It is perfectly hardy here, and will probably grow as strong as the others.

Gerarde, an old English writer, says: "This is the tree whereon Judas did verily hang himselfe." A recent writer, in the English *Journal of Horticulture*, says: "It is quite impossible that Judas could have hanged himself on such a tree as this;" because in English gardens the tree is but a bush, which shows how dangerous it is to go by personal experience only. In its native country of Palestine the European grows 25 feet high, and with a stem 2 to 3 feet in circumference. There would be nothing impossible in Judas hanging himself on such a tree as *that*. Besides, it must be remembered, that Judas exhibited a much more Christian spirit than many of the rogues of our day. He was really sorry for his fault, and was willing and anxious to pay the penalty, and so could easily hang himself on any thing he wanted to. If any Judas's care to come this way,—men who are every day selling their consciences for thirty pieces of silver,—whether they be rascally tree peddlers, or honest deacons, who cheat tree raisers out of their bills, we will show them plenty of Judas trees, on which they may reform the world, by hanging themselves, if they be so minded.

GREEN TEA PLANT—*B. R., Tarboro, N. C.*—"Can you inform a subscriber of your interesting *Monthly*, how to distinguish between the Green and the Black Tea plant? There is some interest in these in our State. Some say the plants are both the same; what is your opinion?"

[There is but one plant. The difference between the two is that when the leaves are dried rapidly, they dry of a greener color than when they are slowly dried. There is a prevailing impression that coloring matter is employed, but this we believe to be an error.]

DESIRABLE COUNTRY PLACE—In our last month's advertising columns, we note an advertisement of Mr. E. K. Tryon's Country place, near Germantown. We are sorry that family reasons should inducc him to part with it, and hope whoever buys it, will keep it up as beautifully as he has done. It is admirably situated for a first-class place, and is offered we think, at a good bargain.

ROOTS OF TREES—We do not know why people cannot differ about horticultural practices and opinions, without seeming to be hurt or offended. We do not suppose any ones opinions on horticulture are received with more respect than those of Mr. Suel Foster, of Muscatine, Iowa, yet, in a notice of some views of the *Gardener's Monthly*, on root fibres, in the *Iowa Homestead*, he says: "To call the small roots annuals, is nonsense," and that he is "a humble and unpretending clod-hopper. Laying aside our friend's application of terms to himself, which we are sure no other one would have thought of, there is much in his paper which gives a coloring to his views of things. He says: "I graft a one year old root; I take off all the fibres, plant it, and it grows." He seems to understand, that because we teach that root fibres are annual, no moisture of any kind can get into the plant's system, except through them. Every one knows that a cutting will sometimes stay a year in the soil without any roots or fibres at all, that they must evaporate moisture all that time, and of course must draw in moisture some way *without fibres;* but it can do this only enough to barely keep up the spark of life. It will not *grow* in any sense worthy of the term until it gets fibres, *neither will a root graft.*

Again, Mr F. is quite right about the nselessness of fibres at certain seasons. He can cut off as many fibres as he choses from apple grafts, as he says, without the slightest injury, because at that season *their time has come.* If it was natural for them not to die,—not to be annual,—injury ought to result from cutting them off. But Mr. F. himself says they do not suffer by it, showing that Mr. F. had only done what *nature herself would soon do without him.*

Of course root-fibres and true roots are embryotically the same,—most die, and a few develop into true roots,—just as leaves and branches are essentially the same in their origin. In Deciduous Cypress and Arborvitæ, this is beautifully seen. The leaves and branches in them are nearly homogeneous; they are, in fact, more branchlets than leaves. But the majority fall off as leaves; but few go on and become true branches.

In short, if any one who wants to know how roots and fibres are essentially the same, and yet functionally different, a study of the Arborvitæ in spring, when it is shedding its young branchlets, will afford a beautiful illustration.

WANTED.—Some friends are anxious to know the whereabouts of Joseph Keyworth, formerly in the nursery business at Mansfield, Ohio, who was to have gone to Europe, but who is believed to be somewhere in Missouri. Information may be addressed to this office.

SEEDLING GOOSEBERRIES.—*Westerman's Favorite.*—Some specimens sent us by a correspondent from Sharon, Pa., a seedling raised by him, is a very large, fine fruit, equal to any English variety, from some of which we suppose this one was raised.

POISON VINE.—A Tyrone Pa, correspondent of the *Country Gentleman*, has found "swabbing" the infected parts of the body with coal oil, an effectual cure for injury from the common Poison Vine—*Rhus texicodendron.*

DISEASED GLADIOLUS—*M. R, Balt.* "I fear I shall tire you with my troubles, but can you tell me what is the matter with my Gladiolus leaves, and if there is any remedy? Some kinds seem more subject to it than others; the leaves get a yellowish tint, when the plant never blooms so finely? [This is believed to be of fungoid origin, but its exact nature has never been ascertained, and we have never known a plant which once had it, to get free from it. If any of our readers have had better success, we should be glad of their experience, for our own information, and to oblige a lady whom we know as an enthusiastic lover of plants.]

TREATMENT OF FUCHSIAS.—*M.R. Baltimore, Md.* "Can you aid me in renovating my Fuchsias? The leaves fall off, and they are mere skeletons with a few flower drops on the ends of the shoots, and look very miserable. I was told by the Gardener who attends our lot, that it would be better if I put them in a shady place, I have done so the last two months, but see no difference."

[Most probably the red spider is pasturing on your plants. The gardener was right about the shade, so that it is not too deep; they prefer it to hot sun. If it is red spider, they can be readily seen with a small pocket lens, moving about like sheep over a mountain. At this late season of the year you can scarcely do any thing to renovate them; but after they have done blooming, cut all the side branches back to short spurs, and when the season for growth is quite over, wash the wooly stems with sulphur and soap in water. In the spring take the plants and shake off the old soil, and wash the roots, potting in new earth; and keep the plants away from any other plants from which they may catch the insects, and as they push into leaf, watch for their first coming and syringe them off. The red spider is a great enemy to many plants, particularly to scarlet sage and violets. No lady should be without a good lens when amongst her garden flowers.

TOMATO SUGAR.—A correspondent asks for further information about this article, which we noticed some time ago in the *Monthly*. We only gave the paragraph as a matter of information, that this use was being made of them. We do not know *how* it is done, as the inventor has patented it. The plan we understand is to make alcohol out of the tomato rather than sugar.

GERANIUMS GROWING TOO LARGE—*M. R. Baltimore, Md* "I have a beautiful scarlet Geranium, given me by a friend, which I value and am anxious to save. It is too large now for my small conveniences, being three years old. Is there any way by which I can reduce its size without injuring it?"

[Cut it back, and this is a very good season to do it. It is not said whether the plant is in a tub or pot, or set out in the open ground to be lifted in the fall. If in a pot, cut it back now as low as desirable. In a couple of weeks it will push out a little, then turn it out of the pot, and it will be found that all the fibres are dead. A plant always looses a portion of its roots in proportion as the top is pruned. Shake out all the old soil, and tear away the dead roots, repotting in a smaller pot, with good soil, and it will grow and make a good new young plant. This is the system pursued by those celebrated English growers of whose famous Pelargoniums (of which your scarlet Geranium is a section) we read about in reports of their exhibitions. Some of their plants though not larger than a bushel are years old.—ED.]

THE SHAMROCK—*Jonathan, Hoboken, N. J.*—"What is the history or mystery of the Shamrock clover? I inquired of an Irish friend who seem'd to think it was in some wayconnected with the history of St. Patrick, but did not know the the particulars."

[A queer son of St. Patrick, not to know the legend of the Shamrock. Barnum would make money on him, with the advantage of no humbug besides. The true Shamrock, those who have investigated believe to have been the *Oxalis acetosella*, a plant which grows in our Northern States, as well as in Ireland, and of which the "Sour grass" eaten by children, (*Oxalis stricta*) from any waste piece of ground, is a good representative. The leaf is like a clover. The history is, that St. Patrick had considerable trouble in converting an Irish King, who could not understand how there could be three persons in the Godhead, each equal to the whole,and the whole equal to the one; but who was satisfied, when St. Patrick showed the three leaflets growing on one stalk. To be sure St. Patrick's botany was not correct, as the leaflet is not equal to the whole leaf; but that was not of much consequence in those days.]

SEEDLING GERANIUM—*Gen Michael Corcoran*—We have a specimen seedling Geranium under this name, too much dried to offer an opinion; but by the number of flowers on a truss, we should judge it to have some merit.

VARIATIONS IN A STATE OF NATURE—*W. R. G., Poughkeepsie, N. Y.*, writes: "I have read with some interest your reference, in the *Naturalist*, to the double flowered Saxifrage; and again in the *Gardener's Monthly*, to the variation in the flowers of Sanguinaria. As some good examples of a departure of flowers from the normal form, in a state of nature, have occured here, I have decided to send you two specimens, and to mention the others. Of the enclosed, the first is a photograph of a *Thalictrum anemonoides*, with flowers all double. It was found here this spring by Miss Shattuck, teacher of Botany at Vassar College. It was a beautiful object when fresh, and its beauty was *one* of the causes of its being photographed. The other specimen is a flower of the *Leucanthemum vulgare* var *tubuliflorum*. In this variety the ligulate rays are entirely suppressed, and the outer row of disk flowers abnormally developed—becoming *bilabiate* and *colorless*, and taking the place of the rays. Last season I found here the "Peloria" state of the *Linaria vulgaris*, like that mentioned by Gray, as having been found in your State by Dr. Darlington. The flowers had *five spurs*, and a *tubular corolla*.

A few days ago I picked a Taraxacum having *two* flowering heads at the summit of the same scape. Hoping that these notes may prove of value to you, as forming another link in your chain of evidence, that *nature* has more to do with variation of plants than the gardener's art."

[We are very much obliged by these facts and hope others will send any they may meet with. Errors always lead to bad results,—and gardening we think has suffered much from the readiness to attribute every natural change to cultivation.]

NATIONAL SEED DISTRIBUTION.—A year or so ago there was a great cry against the Agricultural department at Washington, on the wholesale distribution of seed and plants all over the country. We did our best to remedy this acknowledged evil, but could not advocate the sweeping proposals of many good men, to abolish these distributions altogether. We proposed that only the newer seeds should be distributed, and that the agricultural reports should be the medium for publishing the experiments of the recipients with them. Commissioner Capron has acted on this plan, and the result is, the monthly reports are regularly becoming more interesting; yet one cannot but be struck with the fact, how very few reports come in, in proportion to the great amount distributed. We think Mr. Capron might improve the good work he has entered on, by not sending to any but those whom he knows are likely to report, or who will ask for seed with the promise to report.

HORTICULTURE AT ST. GEORGE, UTAH.—A correspondent writes:—This is a new colony, 350 miles south of Salt Lake City, and 100 north of the navigation of the Colorado, at the junction of the Rio Virgen and Santa Clara rivers.

My garden is but four years old, or it is but four years since I grubbed out the musquit, and yet from our wild flowers, and the importations I have been able to make, I have the best collection of flowers and the finest flower-garden in Utah, as well as the largest and best collection of grapes in the mountain States and territories.

I am constantly finding something new in the floral world, and as fast as possible transfer them to my grounds. I have a NEW large *Convolvulus*. It is, like the children express it, "a big Morning-glory on a Willow-tree." The flower is two inches or more across, of dark purple centre, shaded finely. The plant will stand some four to eight feet high, and is branching, with long, narrow, pendulous leaves, and the flowers here, in June and July, cover the plant every morning. Last Fourth of July it had the most fifty flowers. It grows on the dry, sandy plains, and when transferred to moist gardens it makes a wonderful change. It is shy of seeds; have never got yet but thirty, all told; but the number increases each year, and I expect to get from my oldest plant this year one hundred seeds or more. You will find it one of the finest plants that adorns any garden. The plant is herbaceous; dies every year, and comes up larger and stronger the year succeeding. This plant I raised from seed, and it is five years old, and now stands five feet, and will grow up to eight feet high, like a miniature tree. I also enclose a few other sorts I have now, and if you like our new mountain flowers, I will continue to send such as I find that are new and fine.

We have had swarms of grasshoppers that have taken all my annual plants as they come up.

I hope to be in Philadelphia next September, at the American Pomological Convention, as I have the honor to be Vice President for Utah, and also have the honor to be the President of the Rocky Mountain Pomological Society."

LARGE PEAR TREES.—The Philadelphia *Ledger* says of some Pear trees near Philadelphia:

"Perhaps the oldest, and consequently the most interesting specimen of fruit trees in this section of New Jersey, is a pear tree which now stands on the original Harrison estate, within the corporate limits of Gloucester city. The tree is over one hundred and fifty years old, having been brought to this country by Captain Samuel Harrison, son of the regicide, about the year 1716, in a flower-pot, who planted it upon his premises, where it has ever since stood a monument of the past. It is still in a bearing condition, and the fruit is of a delicious character. The tree is about twenty feet in height and four feet in circumference. This specimen has always borne the name of Bergamy pear, and the tree has been carefully guarded. Some of its branches, however, are decaying, and occasionally, for several years past, it has not borne fruit, but the present year it has yielded liberally. The property on which it stands is now owned by David S. Brown, Esq., and the tree, for the sake of 'Auld Lang Syne,' should be guarded with scrupulous care.

Some readers may think 150 years a long while to trace the history of a single tree; and so it is, but in this particular instance, there is no doubt of its correctness. The facts of the case are furnished by Mr. John Redfield, a gentleman of antiquarian turn of mind, 72 years of age, who has lived all his life in the neighborhood, and personally knew three generations of the family owning the property on which the tree stands. He has in his possession many reminiscences of rare interest to those concerned in the early settlement of Gloucester and of Philadelphia."

[This is good, but there are pear trees in Meehan's nurseries at Germantown, which are seven feet in circumference six feet from the ground. When they were planted, no one knoweth, but they were probably nearly as high as they are now at the battle of Germantown, on which fatal field they stand.]

CROWS.—At a recent meeting of the New York Fruit Growers' Club, Mr. Fuller said:

"Like many others, I was taught when young to look upon the crow as the natural enemy of the farmer; in fact, that it was the duty of every boy to shoot a crow whenever he had a chance. A few years since I commenced keeping tame crows, and since that time I have changed my mind in regard to this bird, and although the old Adam which is so strongly manifested in the habits of some of my neighbors, prevents me from keeping tame crows for any great length of time; still I encourage the visits of the wild ones. Near my house there is a piece of woods where the crows congregate in great numbers, and lay their eggs, and raise their young, consequently I have a good opportunity of studying their habits, and I am free to confess that each year's investigation only increases my admiration of this almost universally condemned bird. One of my neighbors and myself have grown corn for several years right alongside of this resort of the crows, and I do not believe that we have suffered a loss of fifty cents a year from their depredations. The only scare-crow we use is white twine stretched on stakes over the fields for a few weeks while the corn is young. The remainder of the

year the crows are allowed free range through my garden and fields. Rose-bugs, cut-worms, and other noxious insects have rapidly decreased since I adopted this system and conduct towards this bird. It is said that the crow will destroy the young of other species of birds, also eat their eggs, and they may do so to avoid starvation, but if they really loved such food I am quite sure that there are crows enough in the town where I live to destroy in one week all the birds' nests in the State of New Jersey."

[We are glad of Mr. Fuller's advocacy of this very useful bird. All the corn he eats will not hurt any of us—but he does like young birds and birds' eggs. We have a fifteen year old who looks close after bird matters, and his opinion is that the "crows would soon eat all Mr. Fuller's young birds, only he is too great a coward. He's afraid even of a hen-tit," which we think likely.]

VEGETABLE PHYSIOLOGY.—We have frequently called attention to the fact that our works on vegetable physiology are very much behind the age. Almost all sciences have progressed but this, and it has stood still. It is a very common thing for writers with little practical appearance, but an abundance of book knowledge, to appeal to the "eternal laws" of nature, in proof of some pet notion, as these supposed laws are laid down in some old book. But we are quite sure that those of our readers who have followed the *Gardener's Monthly* through its many years' of existence, must know how unreliable are very many of these "laws." There is indeed scarcely a work on Vegetable Physiology which is worth reading by the progressive light of the present day.

The *London Gardener's Chronicle*, we are pleased to find, is also turning public attention to this great want. In a recent number it says truly that not even "Lindley's great reputation would live long by any contribution of his to Vegetable Physiology." It is much to be regretted that we have not more students in this interesting branch of science. Occasions which might result in great good to us all are passed over and forever lost, while we wrangle over what old fellows like Grew or Malphigi saw in their days. We have had, for instance, this season, one of the most wonderful fruit years. We doubt whether anything like it, in this section of the country ever happened before. No better chance ever offered to discover some new laws as affecting vitality than the present season. But there are no students, and the occasion will probably be lost. If it were astronomers, instead of Vegetable Physiologists, they would go hundreds of miles to profit by an occasional chance, as they did during the eclipse; but we have not yet got as devoted men in our branch of study.

THE CLARKE RASPBERRY—*B., Belpre, O.*—We never heard the origin of the Clarke. It was raised at New Haven, Conn. Perhaps its parent was the *Belle de Fontenay*, which it resembles in every respect except that it does not fruit like that one in the fall. Like that variety, it is in particular a villainous suckerer, but when a little labor is bestowed in hoeing these out, it is a tolerably abundant bearer, and a first rate thing. The fruit is really excellent. As to hardiness, you must remember that it is a scion of 'a noble foreign house,' and the question with these seedlings is not, 'are they hardy?' but, 'how long will they keep so?' This is all we know of the 'origin, hardiness and merits of the Clarke.'

SALE OF NURSERY STOCK.—By an advertisement in our regular columns, it will be seen that the old nursery grounds of the Reid Nursery, at Elizabeth, N. J., is to be sold for building purposes, and the stock offered this fall for public sale. Progress is a great foe to arboriculture. It is not so many years ago since the late Mr. Reid had to move away from Murray Hill, in New York city, now worth many millions. He looked on Elizabeth as the perpetual home of his loved trees, but the great enemy follows here; and it seems for the nurseryman there is to be no spot amidst the deluge of buildings, on which he can permanently rest his feet.

THE PARKS, GARDENS, AND PROMENADES OF PARIS, is a new work just issued in England, written by Mr. W. Robinson, and which is really a very pretty and readable book. The *Gardener's Chronicle* has, however, recently pointed out that much of its horticultural illustrations have been plagiarisms from a celebrated French author. It might have added that the arboricultural illustrations are chiefly stolen from another French work, "*Course Elementaire Theorique et Practique d'Arboriculture*," by De Breuil. On a cursory glance at the volume, one might suppose he had De Breuil in hand. There have been some bad cases of horticultural plagiarism exposed in our own land, but few of so shameful an extent as this, and that, too, by "A Fellow of the Linnean Society."

IOWA HOMESTEAD.—This very valuable Northwestern Journal has added to its interest by engaging Mr. D. W. Kauffman as its horticultural editor. Mr. K. is a modest man, but "still waters run deep," and there is no one in the West whose views can be more depended upon.

AGRICULTURAL DEPARTMENT OF THE WORLD.—We notice that Mr. A. B. Crandell, formerly with the *New York Tribune*, is now engaged as agricultural editor of *The World*. Few men know better than Mr. Crandell how to make a readable paper.

JUSTICE to the *Maine Farmer*, demands of us to say, that the paper we quoted from its columns, pretending that the foreign grape was successfully grown in immense quantities in New Jersey by a Mr. Speer, did not originate with it, but was from the *New York Evening Post*. We hope we shall always be as "fastidious" in doing justice as in correcting the errors of others.

LAW AND SCIENCE.—The *Hartford Courant* says:

"A law was passed by the last Legislature for the protection of creeping ferns, and an East Windsor Hill correspondent says it will be enforced. 'The fern is very rare, and this is the only place on the globe where it is found abundantly. There is not one plant now where there were fifty five years ago. Last year the field was wantonly stripped by parties from this city"

[Science must be looking up in Connecticut If this "Creeping Fern" is the *Pteris Aquilina*, they may have had some economic end in view, but if *Camptosorus Rhizophyllus*, sheer love of science must have actuated the members of the Legislature. How much in contrast with Harrisburg, where, when some legislation was needed whereby the Philadelphia Academy of Natural Sciences could make its collection of benefit to the whole city, the gift was not only refused, but some of the Philadelphia members of the Assembly had never heard of the institution.

Possibly we are giving too much credit to the Hartford Legislature. *Punch* says that a Londoner kept boys from his rockery by a sign, "Trespassers beware! *Scolopendriums* and *Polypodiums* set here!" and the boys, of course thought it was something of the nature of 'steel traps and spring guns." Possibly the Hartford boys thought "Creeping Fern" was something allied to gold quartz or silver ore beds, and hence the act as we find it.]

TAP ROOTS.—*B., St Louis, Mo*, says:

"Are you not wrong in your views of the value of tap roots. When we move your standard pear trees we find they have nothing else but tap roots; cut them off, and what have we left? Perhaps your remark that those who argue about the value of tap roots do not know what they are talking about, was not intended to be so sweeping as it seems. I have always advocated the saving of the tap root, and really think the above example entitled to some weight."

[We are always very glad to get well tempered objections to any point we make. We do not pretend to infallibility, and wish to get right, if wrong In the case of the Pear, *annual fibres come out along the surface of this tap root*, and it is only of value in so far as it can do this. Moreover, it has been found byexperience of the best Pear growers, that fibres from surface roots are much better than the fibres from tap roots; hence in planting young seedling pears for budding or grafting these *tap roots are much shortened*, and laterals forced, and in transplanting large trees, it is found that those pears succeed best which have the *most laterals* and the *fewest tap roots*

Our remarks about their not knowing wha they wrote about were intended for the *New York Observer*, on that special occasion, and not for such instances as our correspondent furnishes, where there is good grounds for mistake. The justice of the remark there, could not fail to be observed, we think, by impartial readers. The London *Gardener's Weekly*, edited by Shirley Hibberd, says:

"In the *American Gardener's Monthly* for April occurs a quotation from the *New York Observer*, to the effect that the removal of tap-roots when trees are transplanted invariably proves fatal. The editor of the *Gardener's Monthly* wisely abstains from discussing the question for a very good reason He says, 'We think some who are arguing about this, do not even know what tap roots are.' It is well always to avoid discussing matters that have been settled by the experience of ages, especially wh n the propounders of questions are obviously ign

rant of the facts on which discussion must proceed."]

GOOD JOKES.—We enjoy jokes as much as any one, and are not at all particular whether we pay for it, or the cost comes out of some one else's store. Hence we are as much amused at the following description of a Western strawberry bed, from the pen of Brother Elliott, as if it were "all so:"

"The plants were growing under what such good cultivators as Knox would call, slovenly neglectful—in fact, the plants had no order or form of position, but were made to subserve to the raids of white clover and weeds, and help themselves to the spare spots; this they had done however, most thoroughly; and if there is anything in advising 'no culture' as best, according to our valued friend Meehan, then this berry is one of the sorts to be used in carrying out the practice."

For the benefit of those who don't know Jokes, we may note that the "good culture" of Knox is precisely the "no culture" Meehan recommends.

NOTE ON AMARYLLIS—*Miss A. G., Baltimore, Md*, writes:

"Since writing to you in regard to the Amaryllis, I have put into the garden the young A. Johnsonii, kept during the past three winters in dry sand. This was done about the first of May. They have borne quite cold weather—even a sprinkle of snow—yet one has bloomed beautifully; the first blossom keeping its freshness of tint till the remaining buds were entirely out, which is not the case when blooming in the house. As is frequent in the first stem, it put forth but three buds.

"We have in the family an A. Johnsonii, which has been blooming for at least twelve years, and in possession at least fifteen. Its numerous offspring, and their offspring, have been spread from Maryland to Maine, and in the progress of culture, have even surpassed it in splendor of growth and size of blossom. Is it not a patriarch? It at least cannot say, 'the good *old days*.'"

THE ALASKA STRAWBERRY.—*W K., Newton, Mass.*, is the first applicant for one of these wonderful strawberry plants. He adds to his application: "You do not say whether the berry is 'firm,' but I have no doubt, it is fine, and that a much finer fruit could be raised from its seeds. Mr. Bowden has said how large he could raise a strawberry in twenty years; by 'a combination of peculiar principles," I have no doubt I could get the fruit as large as musk melons. I would, therefore, much prefer the seed to the plants. Do not forget to send me the first plants, and I will distribute the seed freely everywhere, giving the *Gardener's Monthly* due credit, and thus proving to every one that it is the best horticultural journal in the land."

Certainly, Friend K. shall not be forgotten when our negotiations with Mr. Seward are completed. We could enjoy no greater pleasure than to put the first plants into the hands of our correspondent, whose initials are well known as belonging to the oldest living author of an American Pomological work.

RAMIE.—A *Huntsville, Ala.*, correspondent writes:

"I have the pleasure to hand you a handkerchief made of Ramie, in response to a request in the August number of the *Gardener's Monthly*"

[We are much indebted for this favor. It is a beautiful fabric, and settles the fact conclusively that the Ramie is capable of making the finest articles, and that the Agricultural Department is in error. Also we find that the Northern Ramie to which we have referred, is finer, stronger, and a better article than this, and deserves attention.

TAKING OFF CABBAGE LEAVES.—*F. H. G., Urbanna, Virginia:*

"Should the lower or ground leaves of cabbage be broken off while growing? Authorities differ on this subject, and as I am a beginner, would like to have your opinion.

"They could be cultivated much easier, if it will not injure them to take away the bottom leaves. If they may be taken away, does it make any difference at what stage of the growth of the cabbage it should be done.

"Please reply through the columns of the *Gardener's Monthly.*"

[It will not hurt turnips or beets. It is rather a benefit than an injury to them. We have never known it fairly tried on cabbage. We believe, however, it would not hurt much, if any, to take off the mature leaves; but we think it would injure the crop to take off the younger ones.]

LATE KEEPING GRAPE—*B., Johnstown, Pa.*—"What is the best keeping grape for a cold vinery."

[The Barbarossa is praised by those who can get it to fruit, but many complain that it is a shy bearer.]

GREENHOUSE FURNACES—"*Joshua,*" *Tarrytown, N. Y.*—"We are putting up a gmall greenhouse. It is to be heated by a flue which is to run along the back wall, under the stage. The house is a lean-to. The carpenter proposes to have the furnace inside the house, to save the heat, with a trap door to guard against dust and gas, but the gardener, who is from Philadelphia, objects, and says it should be outside. My place is small, and my gardener makes no great pretension to plant knowledge, so I thought I would ask you."

[The gardener is right. There is no heat saved by having the furnace inside,—rather a loss. The fire must be fed with air, or the fire will not burn. When the furnace is inside, this air has all to come from the interior of the house, which has already been warmed, and its place supplied by cold air, which has thus to be continually drawn in through the laps of the glass or other crevices. All this draught of air, which has been heated, is, therefore, a loss. Then with all the care, dirt and gas are likely to escape. Have the furnace outside if possible.]

NEBRASKA STATE FAIR, on the 28th—31st, Sept.—We are much pleased by the remembrance of our friends in this region, by the kind invitation to be present, and which, however, we are unable to accept this season.

FRUIT AND FLOWERS IN OREGON AND CALIFORNIA—Bishop Morris, late of Germantown, having reached his destination in Oregon, a person who accompanied him thus writes:

"OUR new cousin, in San Francisco, has just sent us up some very fine plums, and they are so beautiful and large that I must tell you about them. There are some Green Gages that are very large, and another variety, a fine large purple and reddish Plum, as *large as our largest Peaches* at home. All the fruit here surprises us. The Cherries are as large as our largest Plums *at home.* We have not seen the Apple and Pear crops yet, but they are said to be the *bray Oregon fruits.*

Did I tell you that the Fuchsias in San Francisco grow up the houses and on frames like honeysuckles at home, and the Geraniums grow up into little trees as large as our lilac bushes, and you can see no green leaves for the scarlet flowers that covers the bushes?"

VINELAND FAIR.—In our regular column will be found an advertisement of the Vineland Horticultural Society As will be seen by the dates, the time of meeting is just after the National Pomological meeting. Many of the delegates will thus have an opportunity to see Vineland, and if it strikes them as favorably as it did us on our first visit, they can give themselves no greater treat than to go and see.

WILLIAMSPORT FORKS.—We continue to receive inquiries where these are to be had. On inquiry we find they are kept by Messrs. Landreth & Son, and no doubt by all the other agricultural men who advertise in our pages

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ROBT. J. HALLIDAY'S WHOLESALE PLANT CATALOGUE.—Wholesale plant catalogues are not common. We think it would be a great blessing to the community if nurserymen generally would endeavor to foster more taste for flowers amongst their customers. Mr. Halliday here offers a good chance to purchase Winter blooming flowers cheap.

JOHN P. PARKE, *Trenton, N. J.*—We are much obliged by your letter, and have written to see what explanation can be made. If not all right, we will publish what you say.

VALUE OF SEEDLING STRAWBERRIES—The New York *Tribune* paid Mr. A. S Fuller $7000 for the three strawberries, *Monitor*, Col. Ellsworth and Brooklyn Scarlet.

PLANT FOR NAME—From *C. P, Beaver Dam, Wis.*—Valeriana rubra.

PEAR CULTURE FOR PROFIT is the title of a new work now in the press, by Mr. P. T. Quinn.

EUMELAN GRAPE—*R. B. S, Clyde, Ohio,* writes that this variety promises very well with him. He obtained a plant from Dr. Grant in the Spring of 1868. Four vigorous shoots have set ten bunches which give great promise, although continuous rains prevented them from fertilizing

properly. The canes are 7 feet high. Concord and Catawba have all been destroyed by mildew, but Eumelan, Iona and Delaware do well.

STRAWBERRY EXHIBITIONS.—*Hearth & Home* justly remarks that no test of a strawberry is of value on the exhibition table. This has long been our teaching. The proper place for these tournaments is the strawberry field.

SEEDLING BLACKBERRIES– *R. S, Cleveland, Ohio.*—The berries were a rotten mass. We paid $1.25 express charges on them, and threw the whole away.

SECOND ANNUAL REPORT OF THE OHIO STATE HORTICULTURAL SOCIETY.—This interesting report contains figures and descriptions of some new Western Apples by Dr. Warder. The Flory, Moore's Extra, Wealthy, Stark, Powers, Grime's Golden, St. Joe Seedling, Zimmerman, Parke's Keeper and Lawver,—and an account of the New York Grape Show. Small Fruits of 1868 by G. W. Campbell. Grape culture along the Grape shore by Bateham. New Fruits at the Ohio State Fair, and many other shorter papers with full reports of the meetings of the year. Mr. M. B. Bateham, Painesville, O., is Secretary.

PALACES OF AMERICA.—We ought to have stated that Mr. Scott's interesting paper, in another column, had already appeared in the *Radical*.

PEA—DUNNEITH'S 1ST EARLY, some 6 weeks later sown than some other peas, was ready for use as soon as any, but this earliness, we think, is its only merit.

NEW AND RARE PLANTS.

SPIRÆA PALMATA.—The *Gardener's Chronicle* says: "We are indebted to Mr. Fortune for the following account, read at the last Tuesday meeting of the Royal Horticultural Society, of the beautiful and hardy Spiræa Palmata, which was described by Thunberg in his "Flora Japonica" nearly 100 years ago (1784).—There is a plant of this name in our gardens, but it is very inferior to that exhibited by Mr. Noble, and which is, no doubt, the true S. palmata of Thunberg. The plant is found cultivated in almost every garden in the more northern parts of the Japanese empire, and is a most beautiful object when in full bloom. Dr. Hooker, who has figured it in the *Botanical Magazine*, describes it as "by far the handsomest of the species of the genus hitherto imported, and certainly one of the most beautiful hardy plants in cultivation; the deep purple-red of the stems and branches, passing into the crimson-purple of the glorious broad corymbs of flowers, contrasts most exquisitely with the foliage, which in autumn assumes beautiful tints of brown and golden yellow. Like all the Japanese plants cultivated in, or indigenous to, the more northerly parts of the empire, S. palmata is perfectly hardy in England, and will form a valuable addition to our list of hardy herbaceous plants. The east has already favored us with some herbaceous plants of great beauty, such for example as Anemone japonica and Dielytra spectabilis; and the Spiræa now exhibited will prove a fitting companion to these beautiful and useful species."

LYCOPODIUM TETRASTICHUM.—A correspondent of the *Gardener's Chronicle*, says: At the Moscow exhibition "One of the most remarkable among the novelties shown, is unquestionable a plant called Lycopodium tetrastichum (according to its own label), from Java. It resembles nothing I have yet seen in cultivation of this genus, being of a bold upright habit, quadrilateral, and perfectly regular in outline; the branches are about the thickness of a common pencil or pen-holder. I have not as yet been able to obtain any information as to its owner, or further details respecting it."

A NEW VEGETABLE.—At a meeting of the Horticultural Society of Geneva, held in the Musée Roth, on December 16 1868, Mr. Berger read a paper on the culture of what was to me, and most of the members present, an entirely new vegetable—the "Scolimé d'Espagne."

The "Scolimé" is cultivated largely in many parts of Spain, where it is esteemed a great luxury, as well as a profitable and wholesome vegetable. When growing it looks like a line of Thistles, only rather more handsome than the emblem of Scotland. The root somewhat resembles an ordinary-sized Altringham Carrot, but is white in color. M. Berger brought a good basketful of the roots, which he distributed to any one who wished to taste them. I took four of them home, and next day had them cooked in the same way as we cooked a Turnip or a Potato. With a little melted butter, the Scolimé tasted like well blanched Seakale.

The mode of culture is the same as we practice for Carrots or Parsnips, except the time of sowing. The seed must not be sown before about June 15, or else it will bolt into flower, and the roots will be as tough as leather. By June 15th some of the earlier kitchen garden crops are generally cleared off the ground, and as the Scolime only takes four months to come to maturity, it will (as soon as it is better known) prove to be a valuable second crop. It is perfectly hardy, and keeps good for use from October till March. And being of easy culture, it will be a help (by way of a change) to gardeners with limited means of men and acres, who have to face an angry French cook during the winter months, with a list of vegetables so "limited" that he will tell you he can make no change in his "bill of fare."

Modern seed lists are now so long and ridiculous, that I am a little nervous in advising seed merchants to add one more name to them. Still I will, at the risk of being laughed at, advise adding the Scolime d'Espagne. Permit me here, *en passant*, to remark, that the fault of modern seed lists is not so much that of the seedsmen, as of those who give orders. Twenty years ago I was a junior assistant in one of the largest seed businesses in London. My duties were to keep the shop clear, and mix the old Carrot seed with the new, &c. One morning an order came from a gardener for 12 sorts of early peas. The proprietor was bewildered; but the manager of the garden seed department was equal to the occasion, and got over the difficulty by serving the 12 sorts out of a sack of Early Charltons.

If a modern seedsman now-a-days (with a first class selected stock of seeds) sends out a modest autumn catalogue, he has little chance against another who sends out a catalogue, about the size of an old Scotch family Bible, containing the names of all kinds of rubbish, known and unknown, since the days when our first parents were happy in the garden of Eden.—JOHN A. WATSON, Campagne Lammermoor, Geneva, Switzerland, in *Gardener's Chronicle*."

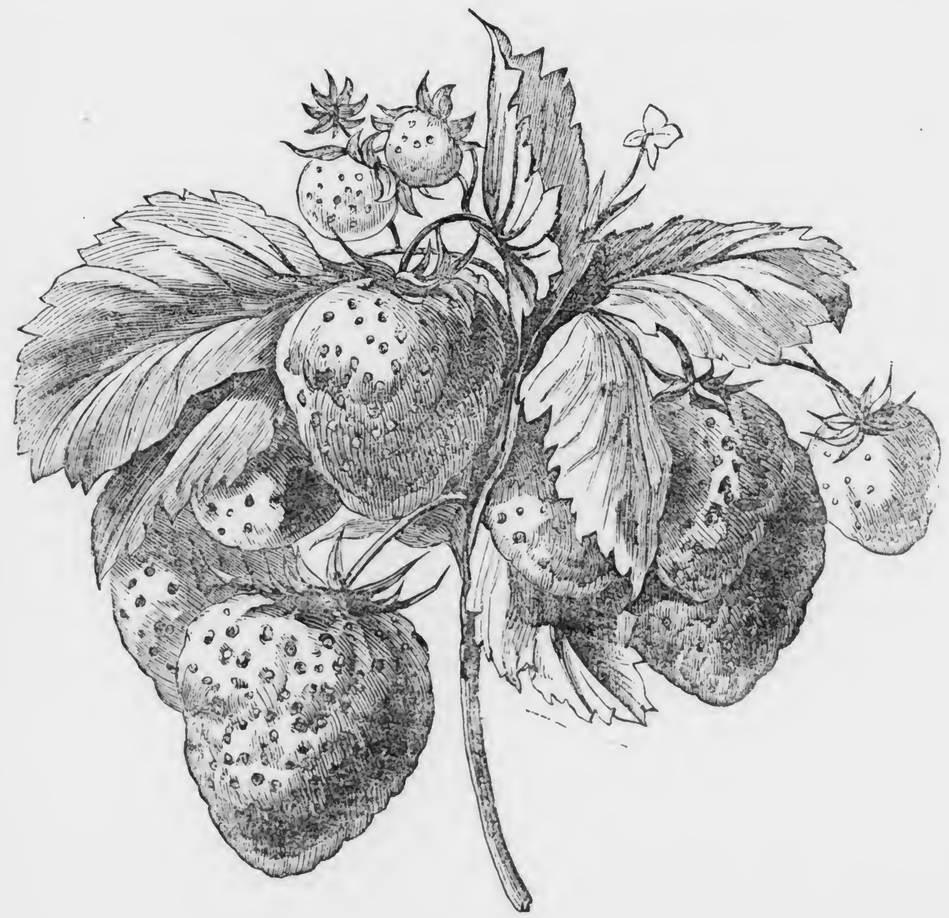
A NEW FODDER PLANT.—We learn from *The Massachusetts Ploughman*, that Mr. Laslier of Boston has introduced and is cultivating a plant which he is confident will prove to be a great acquisition. This is the *Galega officinalis*, a native of Spain. It belongs to a genus of hardy, ornamental, perennial-rooted, herbaceous plants, of the lotus division of the Papilionaceous order. The roots consist of many strong fibres, frequently jointed, stems numerous, hollow, erect, from three to six feet high. Its flowers are produced in loose spikes from the top of the stem, and bloom from June to September. The pods are erect, nearly cylindrical, from five to eight seeded, and swollen out with air. The color of the flowers is light blue, or light purple, white, or variegated.—*Daily Paper*.

NEW VEGETABLE.—The Cheyenne correspondent of the *Chicago Tribune* mentions a new vegetable as follows: We have been enjoying the luxury of a new vegetable that has lately been discovered in great abundance on the plains. Mushrooms, of gigantic size and extraordinary flavor, have been found growing by hundreds of thousands all around Cheyenne. The writer saw one that weighed one pound, was twenty-one inches in circumference, and seven inches in diameter; stem two inches thick and five inches long. When prepared for cooking, the meat was thirteen inches from one rim to the other, and from one to two and one-half inches thick. I ate some of this monster fried in butter—and it would be safe to say, if the mushroom beds around Cheyenne were near your city, they would be worth $100,000. Thus, every day, some valuable discovery is made in this new country.

TRANSCENDENT CRAB.—The past Winter, while visiting a friend, we particularly admired the quality of their dried apple sauce. We were informed that it was made from the above variety of apple, simply quartered, cored and dried. That the skins were so thin that they all disappeared in cooking. This variety bears young, is hardy and prolific for North. Would it not pay in Northern Wisconsin and Minnesota to plant out large orchards for drying and cider? Where other varieties Winter kill it would be better than no apple to eat from the hand. Canned, it is by no means to be despised. If I lived North, where other good apples failed me, I would go in for a good orchard of Tradescendents and Duchess of Oldenburg.—L. L. FAIRCHILD.

NEW AND RARE FRUITS.

DOWNER'S KENTUCKY LATE STRAWBERRY.—In our last No., we gave some account of this new late Strawberry. A friend now sends us a drawing of it. We have not seen the plant growing ourselves, but from what we can learn from friends whose judgment we are accustomed to rely on, we believe this variety will be useful as filling up a gap now occupied by none.



[KENTUCKY STRAWBERRY.]

PEAK'S EMPEROR STRAWBERRY is a new variety that I have fruited this year for the first, and with gratification. It originated with Mr. Peak, of South Bend, Indiana, and is a cross of the Wilson and Hovey. It was introduced into this State by Purdy & Johnston, of whom I obtained it. The plant is remarkably strong and vigorous; the fruit is very large, ovate, elongate, deep crimson, of good flavor, and firm consistency. From my limited experience I consider it the most productive of all the *large* berries, and very nearly equal to the Wilson. Its season is medium to late, or about with the Jucunda. But I forsee that it is to be a subject of controversy; as in form, color and flavor, it bears a strong resemblance to the Agriculturist, and those who disseminate it will be accused of selling an old berry under a new name. I tried the Agriculturist two years on the same soil, as that now occupied by Peak's Emperor, and it did so poorly that I plowed it under. Mr. Purdy declares that this seedling was produced by Mr. Peak before the Agriculturist was heard of in that section.—P. C. REYNOLDS, in *American Farmer*.

DOMESTIC INTELLIGENCE.

LAKE VIEW GARDEN, KENOSHA.—This garden is located south of the city limits, and near the Ladies' Seminary. It contains twelve acres of land, well suited for the raising of vegetables and small fruits. It is under a high state of cultivation, and yields bountifully every yerr. H. F. Phelps, the proprietor, has four acres of Strawberries of different kinds, and same number of Raspberries. He has thirty picking daily, which keeps him busy filling and shipping the numerous orders he receives from Chicago and Milwaukee. He has a grapery and greenhouse which is filled with different flowers, and also Oranges and Lemons growing. His Strawberries have fallen short of the usual yield this season on account of the rain, but his Raspberries will yield him a bountiful harvest. He supplies the citizens of Kenosha with early vegetables. He is adding to his number of acres of berries, and next year will have double his present number.—*Prairie Farmer*.

DURABILITY OF THE MULBERRY.—The mulberry of Asia Minor (*M. nigra?*) is eminent for extreme vitality of root and durability of wood. The mummy cases of Egypt, on which the marks of the workmen's tools are still sharply distinct in color and edge, seem to be of mulberry; and in the much more ancient palace of Nimrod (Nineveh,) beams of mulberry were found by Mr. Layard. This mulberry is also used for posts. Who can tell whether our handsome, useful and healthy *American Mulberry*, possesses in its wood this valuable property of resisting decay? I fear it does not.—W., Tyrone, Pa., in *Country Gentleman*.

KEEPING FRUIT.—NYCE'S SYSTEM.—At a meeting of the Cambridge Horticultural Society, Feb. 3d, Mr. Hervey Davis exhibited twenty varieties of Autumn and Winter pears, which were taken from the large fruit-house of the Massachusetts Fruit Preserving Company, at Cambridge, on January 30th, of which only five or six kinds were ripe enough to eat. The others were hard and sound, and would require from three to five weeks to ripen. He said he had eaten Surpasse Virgalieu and Dana's Hovey as perfect in quality as when fresh from the trees. From what little experience he had had, he thought it important that fruit should be in perfect order when put into the house. It should also be gathered directly from the tree, though he had put some Sheldons in the house which had been exhibited in Boston, Cambridge and Concord, and they had kept very well.

Mr. J. V. Wellington, of Cambridge, exhibitted at the same time beautiful specimens of Lawrence, Duchess, Buerre Deil, Winter Nelis and Beurre Clairgeau which had all been taken from the house the first week in January. He began to take out his Bartletts in October, had shipped a large quantity, and had never heard any complaint of their quality; a few he thought did not retain their flavor as well as others. The Flemish Beauty was hard to mellow. The Duchess he found more difficult to ripen than those kept in the ordinary method. Winter Nelis & Buerre Deil held their flavor best, as far as he had observed; being as good as if they had not been in the house. Inferior fruit should never be put in. After taking the fruit from the house, it should be kept rather cool, then put in a warm place, but not too warm, and all fruit should be kept in the dark, if possible. Fruit wanted February first, should be taken out of the house January first; it required twice as long to ripen them, and after they were ripe they would keep as long again as those that had never been in the house.

THE LARGE TREES OF TEXAS.—The large court house of Navarro county is said to have been covered with shingles made from a single cedar tree. The oaks, pecans and cedars of that section of the country attain an immense size. A pecan tree in Navarro county, on the banks

of the Trinity, measured twenty three feet in circumference. The cedars are often more than 100 feet high.

Flowers at Marriage Feasts.—Describing a New York wedding, a daily paper says :—"A person standing on the lowest floor could see to the very roof of the house, when, to use an expression of one of the guests, you were reminded of a tropical mountain in full bloom.—Of course, all these flowers were not raised in or near New York. The greenhouses of Boston, Philadelphia and Baltimore were ransacked for the occasion. One may get an idea of the exhibition when we say that it brought into use 10,000 camellias, 100,000 primroses, 25,000 white azalias and 2000 heads of daphnes. The collection, altogether, was probably the finest gathering of exotics brought together in one house. Forty men and boys were occupied some days in preparing the frame-work, and they were all engaged during the whole of Tuesday night in arranging the flowers."

Hybridism in Fruits.—It has been stated that there is some evidence to show that the character of one variety of the strawberry was affected by growing in the vicinity of other sorts. Hiram Walker, of Washington county, N. Y., who has practiced grafting since 1818, writes, that according to his experience the same thing takes place with apples and other fruits, and he thinks the fact that some Winter apples do not keep, is not due to their being grafted on stocks of early varieties. He says he never knew any difficulty in the keeping of fruit, where the orchard was all of one kind, but that when early and late sorts were all together, late fruit was rendered early, and early fruit made late, from cross impregnation He mentions a tree in Saratoga county which was in part grafted with a sweet variety, but the grafts bore sour apples for several years ; the grafts of the sweet apple had been put into the lower limbs of a sour apple tree, and as long as the upper limbs of the original tree remained, the sweet grafts bore sour fruit, from blossoms being impregnated by those on the limbs above them; when the natural limbs were removed then sweet apples were produced. Mr. W. mentions other instances of a similar character which have fallen under his observation. The subject is one not only of scientific interest, but of actual importance to all fruit-growers. It is within the observation of every one that a variety of fruit is not the same, even in widely separated localities. This difference is by some attributed to soil and exposure, by others to the character of the stock upon which the fruit is grafted, and now we have the influence of the pollen of neighborings sorts charged with being the disturbing cause. Other observations on these points are needed.—*Utica Herald.*

The Kittatinny Blackberry at Cincinnati.—At a recent meeting of the Cincinnati Horticultural Society Mr. McGregor said that the Kittatinny ripened about the same time as the Lawton, but the berry was sweeter. The Early Wilson ripened eight days earlier than the Lawton, and the berry was double its size. and though it requires more sugar, he considers its quality preferable to that of the Lawton.

Oregon Lumber.—The lumber resources of Oregon are abundant. Dense forests of the finest fir, spruce and cedar grow upon the Coast range, and along the banks of the Columbia river and its tributaries as far up as the Dalles. There is an inexhaustible supply of the finest and best quality of timber at the mouth of the Columbia river, and back of Astoria is the most magnificent forest of spruce and yellow fir that is to be found any where on the Pacific coast. Nature has done every thing to make the forest of timber along the Columbia a source of great profit to the lumberman ; the finest of timber being handy to shipping, and as there is fine water power on all the small streams emptying into the Columbia, lumber can be manufactured very cheap. The bottom lands along the river are also covered with a thick growth of vine, maple, alder, cedar, ash and cottonwood.—*Alta*, Cal.

Cider from L. I. Russet Apple.—Long Island Russet Cider needs no puff from the papers and no endorsements from the American Institute Farmers' Club, as it makes its own record and there is not enough manufactured to supply the demand.

Several years past Long Island Russets have sold at $1 per bushel simply to be made cider, which sells in the Spring when bottled at $6.50 per dozen quart champagne bottles.

The apples are kept as late in the Fall or first of Winter as possible before it is too cold to allow the juice to run free ; all the unsound ones carefully picked out and perfect cleanliness observed. It is then placed in a cool cellar of as nearly uniform temperature as possible, and as it is made so late very little fermentation takes place It is racked off from the barrels in March and April. Some clarify with fish sounds, others deem it not necessary, and put into good champagne bottles, corked and wired and is ready for sale. The fresh juice of the Russet is the best we have ever tasted, and being made so late with so little alcoholic fermentation it has an exhilarating effect, and is the best substitute for wine or alcholic drinks we are acquainted with, both for medicinal properties or for the gratification of the taste We have heard of parties used to wine drinking mistaking it for champagne, and it is certainly preferable to the article manufactured in this country and sold by this name We are not certain but than an orchard of Long Island Russet trees will produce as much profit to its owner per acre for cider making as a vineyard for making wine, and although it will not yield a profit as soon, it may be more *reliable* and cost less money in planting and tending. But cider drinking is passing away, and beer and whiskey is taking its place, and the planting of orchards too much discouraged.—*Whitlock's Recorder.*

Premium Pear.—A premium of $60 offered by the Massachusetts Horticultural Society for the best seedling pear, has been awarded to the variety known as the Clapp's Favorite, after a trial of five years.

Winter Apples in Piedmont, Va. and N. Carolina.—In the *Planter* of March you complain of the great want of Winter apples, and speak of Winesap and Albemarle Pippin as the only Winter varieties worthy of cultivation. If you will examine the map, you will find that Person county, N. C., joins Halifax, Va. We are in the midst of Piedmont region, and what I wish to say is applicable to that region generally, and to the most of your subscribers. Please allow me to say that I have tested as Winter apples the follow, viz. : Hall Seedling, Romanite, Henry Pippin, Green Skin, Rawle or Neverfail, Vandevere, Esopus Spitzenberg, Ben Davis, R. I. Greening, Hyco Sweeting and Warren Gully I have extended your list to a baker's dozen, and will guarantee to any person giving any of the above good culture on a soil that is not wet or water-logged that they will not complain of the want of good *Winter apples.—Southern Planter.*

Timber of the Kentucky Coffee Tree, (of the *Gymnocladus Canadensis.*)—A correspondent of the *Prairie Farmer* says : As a timber tree, it might be planted to advantage for the following reasons, which are given seriatim in answer to the queries :

1st. Because it is valuable.

2d. For ornament and use in the arts, as posts, rails, cross ties, sills, sleepers, &c. ; but more especially for wainscoting and door styles or panels, on account of the fine contrast of colors it presents, and because of its susceptibility to take a high polish ; the colors are dark and light, in strong contrast; hence it has been called the American Zebra-wood.

3d. Because it is durable, much more so than the white oak ; even small growths are used by surveyors for stakes.

4th. It will make good sills for buildings, even where exposed, and ought to make good cross ties for railroads.

5th. It will split freely, but it is apt to be twisted so as to make the rails crooked, the wood being strong and heavy. These are well suited for riders.

Indeed, this tendency to twist and split amounts to an objection. The native logs are seldom more than fifteen to eighteen inches in diameter, always too crooked for hewing long sticks, and very apt to be split or shaky.

Succession of Fruits at the South.—In your number for June 10, you give, in answer to a correspondent, the Summer Rose, Carolina Red June, American Summer Pearmain, and Maiden's Blush, as a succession of early apples ; and Early Tillotson, Large Early York, Crawford's Early, and Oldmixon Free, as a succession of peaches.

The Summer Rose is an excellent apple, and is perfectly at home in the South, but it begins to ripen altogether too soon to form a succession to the Carolina Red June. In fact, you can pick Red June later than you can Summer Rose, as well as earlier. But the Summer Rose, although unsurpassed in quality and bearing, is both smaller and more ephemeral in its ripening than the Carolina Red June ; and so, if but one of them could be planted, I should prefer the Red June. The American Summer Pearmain is beyond all comparison, I think, the best apple of its own or any other season, and succeeds perfectly at the South. If it has a competitor, it is the Julian—a Southern seedling that you North-

erners know but little about, practically. The *tree* of the American Summer Pearmain, as you are aware, is neat, symmetrical and small, while the Julian is a remarkably healthy vigorous grower, and makes a tree of mammoth proportions, and at the same time bears early and abundantly. I hardly know how I should decide between them, were I obliged to choose but one. A careless cultivator should take the Julian, as it is better able to hoe its own row. The Maiden's Blush is too variable in the South to be recommended either for family use or for market. It ripens very nearly with our great Southern summer apple—the Yellow Horse—and is immea surably inferior to it in nearly all respects In ten years after planting, the Horse apple will mature ten times as much fruit, of a far better quality, than the Maiden's Blush. I have ten or fifteen trees of the latter, some twelve years old, and would gladly exchange them all for a half dozen such Horse apple trees of the same age as stand beside them in the same orchard. The Lowell, Gravenstein, Hebron's Surprise, (local name) Summer Red, and a hundred other varieties, are much to be preferred, here in the South, to the Maiden's Blush.

Your list of peaches is better, and if you will leave out the Large Early York—a grand humbug, in the South, at least—and substitute Cole's Early Red or Early Chelmsford, I will not quarrel with your selection.

H. A. Swasey, M.D., in *Country Gentleman.*

Baltimore Parks.—A correspondent of the Philadelphia *Ledger* says :

"The public parks as they now exist in Baltimore, and which are referred to by her citizens with much pride, originated as far back as 1851. To establish a boulevard around the city, a route was surveyed, and is marked on the map of Baltimore. If this plan be adopted and executed, Druid Hill Park will be in the immediate proximity of the then Boundary avenue or Boulevard. When authority was asked of the Mayor and City Councils to lay down tracks for passenger cars in the streets, Mayor Swann replied that his approval of any measure that the Councils might pass would be given only in case it provided for the payment of one-fifth of the gross income of the railways, to be applied to park purposes. The ordinance was passed with this proviso, and as soon as the revenue from the railways reached $40 000, the Mayor, by authority of Councils, appointed Messrs. John H. E. Latrobe, William E. Hooper, Captain Robert Leslie, and General C. O'Donnel, commissioners to select and purchase a site.

Druid Hill was purchased by the Commission from Mr. Lloyd N. Rogers, at a cost of $511,323. 11, including land purchased from other parties. The total cost of the park to December 31, 1868, including land and improvements, was $1.302,-410.61. The revenue derived last year from the passenger railways amounted to $83,966 53. During 1868, the visitors on foot numbered 84,562; horsemen, 11,889; single carriages, 61,415; double carriages, 24,829; passengers by Park Railway, 67,000, making a total of 311,110.

The Park abounds in oaks a century old, and its surface presents a charming variety of scenery, of ravines, hills and meadows. Though nature has done almost everything to make this spot one of the most beautiful that can well be imagined, private liberality has added much to its grandeur. Fountains have been ornamented, and lakes constructed and beautified. Works of art and specimens of natural history have been added as attractions.

The opening of this park has enhanced the value of real estate in the immediate vicinity from 200 to 300 per-cent., and row after row of fine and imposing dwellings have been and are still being erected along the line of the main avenue to the park, and around it in every direction. Patterson Park, in the eastern section of the city, contains thirty acres. Here can be seen the earthworks, thrown up in 1812, for the protection of the city. Of the squares devoted to public use, we should mention Jefferson Square, in the northeastern section of the city; Franklin Square, Union, Lafayette, Eastern Spring Square, and Calvert Spring, in which is the monument to the memory of Colonel Armistead, before referred to. There is a fine spring in Franklin Square, which is resorted to by invalids from all parts of the city, the water being, it is said, most excellent for diseases of the kidney. A new park, to be called Harlaem Park, is now being made in the northwestern section of the city. It will cover a space of two squares in length and one and a half in width. It is the gift of the estate of the late Dr Edmondson.

Peach Leather.—The process is very simple. It is as follows: Crush the peaches (but not the pits or stones) and force through a large culander or coarse sieve by rubbing, until nothing but the skins and pits remain in the sieve, the juice and pulp having passed through into a trough or receptacle. The skins and pits are thrown away, and the pulpy substance poured and spread evenly upon planed boards with raised edges (to avoid its running off), or in large sheet iron pans. In order to avoid a too tenacious adherence to the boards or pans, these latter are to be previously greased with lard, or better still, with butter. It is now to be placed in a kiln, or even a common bake oven, to dry. The sun alone is hardly sufficient to dry so juicy a substance quick enough to prevent its souring. Yet where a large quantity is to be made, it might perhaps answer as well to use both sun and kiln alternately. When properly dried, it is to be taken off; and if properly buttered it will readily peel off in a sheet the size of the board or pan. It can now be stowed away for use. It is a delicious, nutritive, and healthy esculent, in its raw state; can be used as sauce for pies, cakes, etc., as well as the ordinary dried peaches. Let no one suppose that it is the same thing as the ordinary dried peach, or at least no better. It is far otherwise, and a fair trial will prove conclusively that it is *much finer* in quality and texture than the best ordinary dried peach.

In taking it off the boards or pans, the operator will for the first time understand why the article has received the appellation of peach leather, its appearance being so very similar to that of leather. It may be well to add that if good and sound peaches are used, and previously peeled to avoid the down on the peach skin from mixing with the pulp, it will produce the best quality of peach leather. A more inferior article would be to leave the down on, and a still more inferior article would be to mix ripe and unripe peaches. The fact is, good and ripe peaches will make good peach leather, and bad, unripe, and rotten peaches will make unhealthy and bad tasting peach leather.—Correspondent of Philadelphia *Weekly Press.*

The Calabar Bean.—Dr. Thomas Fraser has for the last few years been studying the physiological effects of the Calabar Bean (*Physostigma venenosum*) in the shape of an alcoholic tincture of its exterior coat or *spermoderma*, and also of the alcoholic extract of the cotyledone. The former, used as an injection under the skin, etc., has been found to cause paralysis of the hind legs, but never death. The extract, on the contrary, leads to asphyxia in the course of half an hour. Both these preparations, on being applied to the conjunctiva, determine a considerable contraction of the pupil. They may, therefore, be useful in counteracting the effects of belladonna, or in cases of iritis.

Blackberries in North Carolina.—This article is beginning to be regarded as something more than an old-field product. One gentleman has erected the necessary buildings for going into a pretty heavy experiment. He expects to dry and send to market several thousand pounds of *dried blackberries.*

The Best Grasses.—Out of 160 indigenous English Grasses, only the following have been found of any value for permanent pastures :

Dactylis glomerata	Cock's-foot Grass.
Alopecurus pratensis	Meadow Foxtail.
Festuca pratensis	Meadow Fescue.
Festuca duriuscula	Hard Fescue Grass
Phleum pratense	Greater Meadow Cat's-tail Grass.
Anthoxanthum odoratum	Sweet-scented Vernal Grass (which gives its scent to hay.)
Avena pratensis	Meadow Oat grass
Avena flavescens	Yellow Oat grass.
Cynosurus cristatus	Crested Dog's-tail Grass.
Holcus avenaceus, or Arrhenatherum avenaceum	Tall Oat-like soft Grass.
Hordeum pratense	Meadow Barley Grass.
Lolium perenne	Rye Grass.
Poa annua	Annual Meadow or Suffolk Grass.
Poa trivialis	Rough-stalk Meadow Grass.
Poa pratensis	Smooth-stalk Meadow Grass.

Delaware Peaches. Among the first peach orchards planted in this State were those of Mr. Ridgway, near Delaware City, in 1833; Major Reybold's, in 1838; and Mr. Spearman, in New Castle county, in 1838.

Mr. Todd, of Dover, planted the first orchard in that vicinity, in 1840. During that season one orchard of about forty acres realized a profit of about $9,000, and this fact started the great peach excitement, which still exists, and so far has resulted in the planting of about 2 000,000 trees in Delaware and on the Eastern Shore of Maryland. They consist of the following varie-

ties :—Hale's Early, Troth's Early, Early York, Crawford's Early, Reeve's Favorite, Old Mixon, Ward's Late, Fox's Seedling, Crawford Late, Delaware White, Patterson's and Freeman's White, and Smock Yellow. The peaches ripen on these trees in the order given above, and therefore a good supply is kept up from about the 20th or 26th of July until nearly the close of September. After planting the trees the ground is cultivated in corn for three years, but after that the trees shade the earth to such an extent that it will not pay to plant any kind of crop. The ground, however, has to be well cultivated every year and manured, if the trees are expected to bear well and live any length of time. It has often been stated that the trees will not bear to any extent more than four or six years ; but the most intelligent and experienced gentlemen in the business say that the trees will remain profitable for fifteen or twenty years, and that the orchards which die out in six years do so because they have not received proper care and culture.

Land is now selling in Caroline county from $10 to $25 per acre.

The orchards in Delaware occupy from 40 to 1000 acres each, and when the trees are from six to eight years old, from three to four bushels of peaches will be gathered in a season from each tree, but the general average is about two bushels, which in a season like the present will realize from three to three and a half millions dollars. On 150 trees of Early Troths, planted near Middletown, 700 baskets were realized this season. The shipments from this station amount now to 5000 baskets per day. About one hundred and twenty of the orchards in Delaware were sold at an early date to speculators, at from forty to fifty cents per basket, in Kent county and fifty cents Newcastle county, the owner of the orchard having the peaches picked and delivered at the nearest station.

So far as the early peaches are concerned, the parties who sold their orchards have had the best of it, as those who shipped their peaches to a market have not realized much profit, and in some cases they suffered a loss. The peaches were small, in consequence of the great number on the trees and the dry weather, and thus they were sold at a lower rate than usual. The peaches to be shipped next week, and from then until the close of the season, will be large and fine, and then the grower expects to realize his profit. Mr. S. Townsend, below Middletown, has 40,000 trees, of the different varieties, and all of them are as full of peaches as the limbs of the trees will bear.

It is estimated that at least 3000 men, women and children are now engaged in Delaware in gathering the crop. Men are paid $1.00 per day and boarded, or $1.50 if they board themselves. Women and children receive about half of the above rates Employment is also given to a large number of persons in various parts of the country in the making of baskets and crates, the former costing from twenty to thirty-five cents each, and the latter twenty cents each.

The peaches reach Philadelphia and New York in better order than in former years, in consequence of the recent improvements made in ventilation, particularly in the cars belonging to the Philadelphia, Wilmington & Baltimore Railroad.

To give the reader some idea of this great business, we procured the following statement of the number of car loads sent over the Delaware Railroad to New York, on Tuesday last : Laurel, 1 car load ; Seaford, 2 ; Bridgeville, 4 ; Greenwood, 2 ; Georgetown, 2 ; Milford, 6 ; Harrington; 6 ; Canterbury, 2 ; Camden, 10 ; Mooreton, 3 ; Dover, 8 ; Brenford, 3 ; Clayton, and stations on the Delaware and Maryland Road, 20 ; Sassafras, 4 ; Blackbird, 1 ; Townsend, and from stations on the Kent and Queen Anne's Road, 11 ; Ginnues, 2 ; Middletown, 10 ; Armstrong, 5 ; Mt. Pleasant, 3, and Willow Grove, 1 ; making a total of 103 cars, each carrying 16,000 pounds, each basket weighing about 32 pounds.

Since the commencement of the present peach season, about 700 cars have passed over the road, conveying to market over 11,000,000 pounds of peaches. Each car carries 500 baskets, each basket holding about five eighths of a bushel.

In addition to the peaches sent from this State by rail, thousands of baskets are sent to Philadelphia and other places by steamers passing through the canal, which passes near to some of the orchards, and by vessels plying in the rivers and creeks throughout the State. The whole yield this season throughout the peach growing region is estimated at 5,000,000 baskets. Notwithstanding this immense amount, it is said that a large number of acres of ground now devoted to agricultural purposes, will be planted in peach trees next fall, as it is thought new markets will be opened at more distant points, as railroad facilities offer, and improved methods of keeping peaches are introduced. The corn throughout this section of the country is suffering much at the present time for rain.—Cor. of *Phila. Ledger.*

GARDENING FOR WOMEN.—A committee of Boston ladies has appeared before a Committee of the Massachusetts Horticultural Society, and consulted with them on a plan for a school of gardening for women. They want 100 acres near a good market, and propose to make the school industrial and self-supporting.

FOREIGN INTELLIGENCE.

VEGETABLE PRODUCTS OF N. W. AMERICA.—In times of scarcity the Indians in Oregon smoke the twigs of Thuja gigantea, Nutt. ; and the bark of Cornus sericea, L. (the *bois rouge* of the Canadian *voyageurs*, is usually mixed with Tobacco even in times of plenty,—a habit the fur traders have learnt from them. The leaves of Arctostaphylos Uva-ursi, L., are also extensively used among the Indians and frontier men all over the American continent, either alone or (more usually) mixed with Tobacco under the Ojipway name of Kinikennick. Luckily for them, although passionately fond of intoxicating liquors, they have not acquired the art of preparing any. The stem of Acer macrophyllum, Pursh., contains much juice, but the Northwest Indians have never attempted to make sugar from it as in the case of A. saccharinum, L., in the eastern provinces ; indeed, neither have the whites. The Crees, however, made a sugar from Negundo fraxinifolium, Nutt., which probably extends over the Rocky Mountains.—*R. Brown, in Pharmaceutical Journal.*

TRANSPLANTING A LARGE TREE.—At Elveden Hall, the seat of the Maharajah Dhuleep Singh, considerable interest has been excited by the sucessful removal of a very large tree, under the superintendence of Mr. Barron, of the Elvaston Nurseries, Derby. The remarkably fine specimen of purple beech thus transplanted is nearly 50 feet high, the diameter of the branches 58 feet, and the circumference of the stem at about a foot from the ground 7 feet 8 inches. The mass of soil and undisturbed roots measured 16 feet by 14 feet, the roots extending 6 feet beyond, and the whole weighed considerably over 20 tons. A platform of strong timber was constructed underneath, and the tree was raised upon rollers laid on planks, by means of powerful screw jacks. This being done, the tree was drawn on to its new site with the aid of pulley-blocks of unusual size, being maintained throughout in an upright position.—*Gardener's Weekly.*

HORTICULTURAL NOTICES.

AMERICAN POMOLOGICAL SOCIETY.

It is pleasant to note that many of the railroads have agreed to act with great liberality to the delegates to the Society. The following roads have agreed to *return free* all who shall pass over their respective roads : Penna. Cent., Northern Cent., Cleveland, Col. Cin. & Ind., Wilmington & Weldon, Memphis & Charleston, Louisville & Nashville, Memphis & Louisville, Vicksburg & Meridite, New Orleans, (the one of which Genl. Beauregard is President.)

The following will furnish full tickets on purchasing at two-thirds : Phila. Wil. & Balt., Balt. & O., Camden & Amboy.

The following will reduce the fares to delegates: Falls River Line, Boston to N. Y., for $7 ; Stonington Line the same, and Boston, Albany & Springfield, $6.

The Local committee hope to add others before the meeting.

ALTON HORTICULTURAL SOCIETY.

Met at the residence of Dr. E. S. Hull. We were highly honored at this meeting by a visit from several distinguished horticulturists from abroad, among them we noticed Thomas Meehan, of Philadelphia, editor of *Gardener's Monthly;* Dr. I. A. Warder, the veteran Pomologist, of Ohio ; Dr. Morse, of *Journal of Agriculture*, St. Louis ; Dr. Spalding and I. M. Jordan, of St. Louis ; B. F. Lazear, of Missouri and the Hon. Sharon Tyndale, of Illinois.

The committee appointed to visit the cherry orchard of Dr. Hull, reported the orchard in fine order yielding large crops, which sold in Chicago at $4 per box. The trees were not suffered to over-bear,—thinning of the fruitspurs being resorted to—seven-eights are often rubbed out.

The orchard is believed to be the largest bearing, sweet cherry orchard in the State, containing about 80 trees of the following varieties: Black Big. de Savoy, Knight's Early Black, Gov. Wood, Black Tartarian, Elton, Gridley, Black Eagle, Napoleon Big., English Morello, Cleveland Big., Belle de Choisy, Yellow Spanish, Arden White Heart, May Duke, Belle Magnifique, Big. de May, Downer's Late Red and Elkhorn. Of these, Knight's Early Black, Big. de May and Arden White Heart are the three earliest. Knight's Early Black, Black Big. de Savoy and Gridley the three best in quality. Gridley, Napoleon and Yellow Spanish the three most prolific.

The trees are planted 10 feet each way, rather too close.

The Grape Committee reported indications of mildew and rot in many instances. The leaf hopper is less destructive than usual.

Mr. J. M. Pearson read a very interesting essay on *underdraining*. Though lands were naturally dry, if high, underdraining prevented much surface washing. The best results were from drains which had been longest in operation. Drained land could be sown or planted earlier in the Spring.

Our Spring rains bring us a great deal of surplus water. This must pass off either by surface-draining, evaporation or under-draining. Remember, that water falling at this time of the year, in addition to its usual portion of ammonia and other gases, is also warmer than the water in the ground, or the ground itself. Now, if it passes off over the surface we get no benefit from this heat, or the memorial properties of the water, besides losing much organic and soluble matter. If it passes off by evaporation the case is worse, for although we may retain the organic matter, the absorption of heat required to convert the water into vapor, will keep the soil and surrounding atmosphere cold for a long time, and leave it baked and hard upon the surface.

You will also observe that these soils are not liable to bake or to become cloddy, and have more power, owing to their structure, to resist drought. I would say that upon all clay soils, when the land, exclusive of improvements, is worth seventy-five dollars per acre, it will pay a good dividend upon the investment, and this brings up the last question: "How much will it cost?" At present prices it will cost from forty to fifty dollars per acre to thoroughly drain our land. Some of us have spent this year two or three hundred dollars for phosphates, guano, and sash and frames for hotbeds, &c. This, too for things that perish in a season, or are repaired at much expense. Underdraining lasts for a life time, and, for aught we know, the lifetime of our children. Is it not worth a trial? No one who has ever tried it has regretted it, which is more than can be said of most of the improvements of the day.

Take advantage of a rainy day and fortify yourself with a good pair of boots, overcoat and a hoe. A few hours observation at such a time, with an occasional stroke of the hoe, will give you a good idea of the topography of your own farm, and no mistakes in the level. You can see where the water wants to go.

You need a few stakes made in the shape of a T square, to use in laying off the ditch—make them yourself, about four feet long with cross heads about two feet—these driven in the ground will enable you, with the eye alone, to give you the proper depth to which the ditch must be dug at any point so that the workmen need never be in doubt.

Mr. Meehan was called upon for information in regard to root growth, and said: "The same rule prevails in regard to root growth as to top growth. We have the trunk, branches and branchlets—these sustain the leaves. We find the same plan in root growth. It is the terminus of the roots that absorbs food, these fibres are simply metamorphosed leaves, and die away in the same way as leaves do. The fibres are the main or true feeding roots. The long, large roots, that are, for a large portion of their length destitute of fibres, show that these have died away annually. The tree is sustained in nutriment by the fibres, and not by the main trunk of the roots, hence their importance Roots take up chemical and mineral food. There must be constantly evaporation from the tops. If any circumstances stop evaporation, the tree dies. Roots follow manure, by some sort of attraction, invariably turning to where the manure is."

At this stage of the very interesting lecture, the meeting being in a grove, was compelled to adjourn by a shower of rain.—*Condensed from Secretary Kingsbury's Report.*

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HINTS FOR OCTOBER.

FLOWER GARDEN AND PLEASURE GROUND.

The remarkably hot and dry season we have had all over the Union, has been singularly unpropitious for fall flowers. Dahlias came into bloom early, and in September when we should have had beauty, found nothing but dried heads and green leaves. The Gladiolus, well as it usually stands dry weather, did not last long in bloom. Fall roses were simply "nowhere",—and the Chrysanthemum which makes the fall of the leaf so cheering, rather excites our pity for itself. Those who have depended much on flowering plants for the gaiety of their gardens, have failed in most but Geraniums and Petunias; while those who have rather rested for their success on masses of colored leaves, are triumphant. The Coleus, Achyranthus, Teilanthera, Vinca variegata, Centaureas, and similar things, have gone through the drought gloriously; and we have no doubt this species of gardening will be immensely popular another year. We still want more variety among this class of plants. At present, one person's garden is too much a copy of another, where the style of massing with colored leaves prevails. Two very good silver-leaved plants of this season's introduction are *Centaurea gymnocarpa*, which has leaves very much like the old "Miller's Geranium" (*Cineraria Maritima*), as it does not grow so tall as that, it is better adapted to some forms of masses The other is a white leaved, woody but trailing graphalium also called *gymnocarpum*, but we suspect wrongly named. The large variegated Periwinkle is not much in use, though not amongst the least valuable by any means. It is a good season to think of these things; as wherever this kind of gardening is to be done, six months i little enough to get the plants ready in.

We think ornamental vines have been too much overlooked in the summer decoration of grounds. We have seen this summer some remarkably pretty effects from the hybrid Nasturtiums, Cypress vine, Maurandia, and other summer vines. There are several new "morning glories" of various colors, of which pretty groups could be made, but as these are mostly closed before nine o'clock, they are of no use to city ladies; but are charmingly sweet things for the country girls, who always have the best of everything in life, thought not always thinking so. These vines could be arranged on fancy figures, or according to colors, and certainly the effects in some parts of the ground would be as striking as that derived from leaf plants.

Planting of spring bulbs, tulips, hyacinths, crocus, snowdrops, frittilarias, lilies, &c., and the transplanting of shrubs, and division of herbaceous plants, will occupy chief attention in October. All herbaceous plants are much better for being protected through winter by a covering of dry leaves, on which a little soil is thrown to keep the leaves from blowing away. Half-hardy roses and vines may be protected in the same way. When they are very long and slender, they are taken down from their trellises, and coiled into circles as small as may be, without risk of breaking them, and then the soil put on. Those things that grow late, such as many kinds of Noisette Roses, should have their immature top shoots shortened a few weeks before the protecting process is commenced. The wound will then heal over, and not cause the decay of the upper portion of the shoots, as is

very often the case when they are either cut at laying down, or not shortened at all.

Of course, those roots that suffer by frost should be taken up before danger. Gladiolus, Madeira vines, dahlias. tuberoses, &c , for instance.

Tree seeds should be either sown or prepared for sowing in the fall. Hard shell seeds require time to soften their coats, or they will lie over a year in the ground. It used to be popular to to mix with boxes of sand; but unless there be very few seeds to a very large quantity of sand, the heat given out though perhaps imperceptible to us, is sufficient to generate fungus which will destrov the seed. It is much better to soak the seeds in water, and then dry just enough to keep from mouldlng, and as cool as possible all winter. This is a much safer plan than sand. In States where the frosts are severe, seedlings of all kinds that have not attained a greater height than six inches, should be taken up, "laid in" in a sheltered place thickly, and covered with any thing that will keep frozen through the winter If left out, they are liable to be drawn out and and destroyed. Young seedling stock received from a distance, should be also so treated. In the more Southern States they may be set out at once,—and as much planting as possible be accomplished that will save spring work. Many cuttings will not do well unless taken off at this season and laid in the ground under protection, like seedlings,—the quince, syringas or lilacs, spirœa prunifolia, and some others. In the "mild winter States," evergreen cuttings should be made now, and set out thickly in rows. The leaves need not be taken off, but short, thick-set branches laid in under the soil. When rooted next fall they may be taken up and divided into separate plants. In more Northern States, evergreens may not be so struck at this season, unless protected by greenhouses and frames. Where these are at hand, evergreens may be put in, in boxes or pans all through the winter.

GREENHOUSE.

The taste for cut flowers is considerably increasing, and one of the greatest demands on a greenhouse in winter, is from the best half of the head of the household for room and table decorations. Beautiful specimen plants are not so highly valued as those which will afford plenty of bloom for cutting. The various kinds of zonale geraniums are very good for this purpose. The following also comprises very useful plants for this purpose: Bouvardia leiantha, Calla Ethiopica, Cestrum aurantiacum, Habrothamnus elegans, Chorozema varium, Chinese Primroses, especially the double white, Daphne indica, Poinsetta pulcherrima, Euphorbia splendens, Heliotrope, Mignonette, Sweet alyssum, Catalonian jasmine, Yellow Jasmine, Mahernia odorata, Stevia serrata, Violets, Roses, Cinerarias, and Brompton stocks. Tuberoses that flower late may be carefully taken up and potted, and will last till over christmas; and many things may be taken out of the ground and slightly forced. The common white Lily is good for this purpose, also Deutzias, Philadelphuses, and Tamarix. The common green Euonymus japonicus, is also worth potting to make a lively green for mixing with other things.

In taking up things from the ground for potting, care should be taken to have the pots well drained, with pieces of potsherds over the hole. The more rapidly water passes through the soil the better plants will grow. Pots could be made without holes, and the water would all go through the porous sides in time; but that is too slow a way, so we make a hole to admit of its more rapid escape, and we place the broken pots over the hole to make a vacuum, which assists the objects of the hole. In very small pots, or with plants which have strong enough roots to rapidly absorb all the moisture they get, and speedily ask for more, "crocking" is not necessary.

There are but few things in the greenhouse that will require special treatment at this time. Camellias and Azaleas, as they cease to grow, will require less water; but it is now so well known that moisture is favorable to growth, and comparative dryness favorable to flowering, that we need do no more than refer to the fact.

Bulbs for flowering in pots should be placed at once. Four or five inch pots are suitable. One Hyacinth and about three Tulips are sufficient for each. After potting, plunge the pots over their rims in sand under the greenhouse stage, letting them remain there until the pots have become well filled with roots, before bringing them on to the shelves to force.

VEGETABLE GARDEN.

Lettuces sown last month will now be large enough to set out for permanent growth. A common hotbed frame, set on a bed of leaves or spent stable-manure, will enable one to enjoy delicious salad all through the latter part of winter, where sufficient protection against severe

frosts can be secured. In this division of our Hints, it is more of an object to preserve them through the winter for the purpose of setting out in the open air in spring. In the warmer States this can be readily effected by their being set out in the open air in a sheltered place. Here in Pennsylvania they often do very well by having the ground thrown into ridges about six inches deep, running east and west, and the plants set out on the northern sides. They have a little straw thrown over them in severe weather, and get through the winter admirably, heading early in spring. The Early York Cabbage is extensively grown the same way. Where the climate is too severe to allow of this, they must be put under cover of shutters, as before described in our Hints.

Cabbages can be preserved in such a cellar, though most prefer them in the open air. One way is to pack them closely together with their roots uppermost, and then cover them with soil, on which straw or litter is thrown to keep them from freezing. By being packed this way, the water cannot get into the hearts, which is one of their chief causes of their rotting. Where plenty of boards can be had, they may be packed with their heads uppermost, and the rain kept off by the material.

Brocoli and Endive may be taken up with balls of earth, and set in cool cellars closely together, and they will grow sufficiently—the former to produce good head, and the latter to blanch beautifully all through the winter.

Asparagus beds should be cleaned, by having the old stems cut off and the soils from the alley ways dug out and thrown over beds. It keeps the frost from the roots, and thus permits them to grow and lay up matter all winter for next spring's growth. Very early in spring the soil should be raked back into the alleys, so as to leave the roots but a few inches under the soil, as the nearer they are then to the sun's rays the earlier will the crop be.

Celery must have continued attention to blanching as it grows, care being exercised to prevent the soil from entering the heart. Where very fine results are desired, the plants should be protected from early severe frosts, so as to enable the plants to grow without injury as long as possible.

Roots of most kinds, such as Carrots, Beets, etc., should be taken up before the frost is severe. They all keep best packed in sand in the open air, but it is too inconvenient to get at them in winter; hence cellars are employed to preserve them in Cellars for this purpose should be cool say with temperature of about 45°, and not all dry. It is not meant that it should be damp, as the roots will become rotten, but it must be moist enough to prevent shrivelling.

However, if any protection can be given so as to enable one to get at the pit in frosty weather, most things keep better so than in any way. Celery keeps very well packed in earth so that the frost does not get at it; but it must be laid with the tops sloping, so that the water may be kept out of the heart.

FRUIT GARDEN.

We noted recently that most fruit trees except Peaches, did best planted early in the fall; Peaches best in the spring A friend thinks this is only true north of the Potomac. South, Peaches are no exception to good fall planting. We thought we made this geographical line clear at the time,—it will do no harm to note our friends explanation. In fact it is best to have no line, but to *understand the reason*; which is this:

The roots of trees grow, and absorb moisture all winter. They are healing over the wounds of transplanting, ready for pushing out leaves in spring. The longer the time the greater the healing power.

But, the *Gardener's Monthly* has shown that there is an evaporation of moisture in winter, *greater in proportion to the lowness of the temperature.*

Therefore, in places where the thermometer will fall below 20°, or in places exposed to high cold winds, the loss of moisture is greater than the gain, and Peach planting best left till spring The other fruit trees do not evaporate so freely, and so do well.

We may perhaps repeat the advice to plant considerably more fruit trees together on the same space of ground than is usually done, even though some has to be cut away in time. Thi should especially be in the case where parties prefer to keep the surface soil clear; as the intense heat reflected from bare soil is one of the great sources of disease in young trees. It might be well to introduce nurse trees into orchards, to obviate this somewhat. Alders, Poplars or Willows, might we think, be used to advantage; of course, cutting them away before they grew large enough to interfere with the roots of the fruit trees. A dry warm bottom, but *cool surface* is of the highest importance in fruit growing.

COMMUNICATIONS.

DOUBLE GERANIUMS.

BY JOHN SAUL, WASHINGTON, D. C.

My collection of double geraniums has been so extremely beautiful the present summer, I thought a notice of a few of the most valuable varieties would be interesting to the readers of the *Monthly*. I have heard double geraniums spoken lightly of, but if persons who viewed them thus lightly could see my bed of doubles in bloom, they would alter their opinion. Growing beside the single varieties,—Zonales and Nosegays,—they are immeasurably ahead of the latter. It is true that some of the doubles first sent out were very inferior; we have now, however, varieties with noble trusses of finely formed flowers, which stand well above the foliages, such as Andrew Henderson, Madame Lemoine, Imperatrice Eugenie, Triomphe, Triomphe de Thumesnil, Surpasse Glorie de Nancy, etc, which show their magnificent heads of bloom to great advantage. Their large foliage has been objected to. This may be objectionable in pot culture, or in a moist climate, like that of Great Britain; but in our warm, dry summers this large foliage, with stems, trusses, flowers, and all in just proportion, they make finer masses than the more diminutive sorts, with smaller and perhaps more beautifully marked foliage. Many of these last are strictly house plants, whilst the doubles are not adapted for pot or house culture, but are in their proper place, massed out of doors. In bedding out, good strong plants should be used. For summer boquet making, these doubles are admirable, as the flowers are more persistent than those of the single ones. The following varieties are very fine:—

Andrew Henderson. This is an exceedingly beautiful variety, with immense heads of finely-formed flowers; color, a deep scarlet lake, very distinct; plants of good branching habit, very free bloomers,—amongst the finest.

Imperatrice Eugenie. When we say it is the color of the single "Beaute de Suresne," (a vivid rose,) that the flowers are elegantly formed, good habits, and free bloomer, it can be easily seen that it is a beautiful variety.

E. G. Henderson. Trusses large, of a beautiful globular shape, color a fiery carmine, very double, compact habits, free flowering, distinct and fine.

Madame Lemoine. This grand variety has caused quite a sensation among double geranium growers in Europe the past season, and it has proved very fine with me; color a most beautiful rose, of a pleasing shade, fine large truss, flowers well formed, free bloomer, universally admired wherever seen. This variety will be extensively grown.

Emile Lemoine. Fine large truss, individual pips finely formed; color, light orange scarlet, good compact habits, free bloomer, very attractive.

Madame Rose Charmeaux, or Double Tom Thumb. This has the habits of the well-known old favorite, "Tom Thumb" Truss large, color a deep, brilliant scarlet, very double, dwarf, compact, bushy habit, most profuse flower, a very distinct and desirable variety.

Wilhelm Pfitzer. Immense trusses, individual flowers large, very double, of most perfect shape, color a dazzling orange scarlet, habit remarkably dwarf and compact, most profuse flowerer. A superb new variety.

Triomphe. This is truly a noble flower. My plants, now in bloom, have very large (immense) trusses of flowers, very double, color a brilliant scarlet, free bloomer. One of the best.

Triomphe de Thumesnil. This fine variety has very large trusses, individual flowers large and double, color a bright carmine, habits good, most prolific flowerer. A fine standard variety.

Triomphe de Lorraine. Trusses large, color cherry carmine, very double, nice compact habits, free bloomer.

Surpasse Glorie de Nancy. An improvement on the well known "Gloire de Nancy," has larger trusses, produced in great abundance; color, a rosy carmine.

Capitaine L'Hermite. Bright rose, shaded with amaranth; very double, truss large and fine form, free flowerer, and compact habit.

DOES THE SCION INFLUENCE THE STOCK?

BY W. H. W., READING, MASS.

I noticed, a few weeks since, in one of the houses of H. H. Hunnewell, Esq., at Wellesley, Mass., an interesting fact, possibly shedding some light upon this question. One of the old varieties of Abutilon had been grafted, at about four feet from the pot, with a cutting of the new variegated-leaved Abutilon Thompsonii. The graft had grown well, but at about a foot and eighteen inches from the soil, the stock had thrown out two new shoots, with the foliage as distinctly variegated as in the scion above.

[On a recent visit to Wellesley, we saw the plant referred to by our correspondent. The variety used as a stock we believe was *A. venosum*. Unfortunately, the variegated part had been broken off; we were anxious to see whether any other change had been made besides variegation. If the shoot from the stock was exactly the same as the stock in all but variegation, it would not be conclusive that it became variegated from the graft, as variegated branches frequently come out from plants without any grafting. Yet it is a remarkable co incidence that a similar case has been recorded in England; and it is therefore probable the graft has something to do with it. The late William Reid assured us variegated willows would transmit their influence to the stock. The fact certainly indicates that they may, but the suspicion with us is, why is it so rare? If in a few cases, why do we not see it oftener? And there seems, therefore, quite as much reason for supposing that the stocks in the cases noted might perhaps have pushed out variegations, even had they not been grafted, as we know they often do. We should be very glad to have more facts, if any of our readers know of any.—ED.]

SEA-SIDE PLANTS.

BY J. W. L., PHILADELPHIA.

During a recent visit to Atlantic City, I found there quite a number of visitors who were interested in botanical pursuits, and for whom the finding of flowers peculiar to a sand and saline locality possessed attractions even greater than those afforded by the daily surf-dip. As a slight aid, perhaps, to those thus inclined, I send you (at the instance of my friend James Lippincott, of Haddonfield,) the following list of some of the plants—most of them flowering in August—which are to be found on that easily accessible beach. They are not all "peculiar" to the sea-coast, for some of those mentioned are frequent otherwheres; but *very* common ones are omitted.

As, however, I am informed that you were yourself at the beach last summer, and probably have investigated its flora pretty thoroughly, the list,—as you can readily determine,—may not really be so complete as to be of special service, in which case its *non*-insertion will accord with the wishes of your correspondent.

FLORA OF ATLANTIC CITY. (August.)

Growing in *pure sand:*

Salsola Kali—*Common Saltwort.*
Euxolus pumilus—*Dwarf Amaranth.*
Cakile Americana—*American Sea-Rocket.*
Euphoroia polygonifolia—*Shore Spurge.*
Polygonum aviculare, var. littorale—Species of *Knot Grass.*
Rhus copallina—*Dwarf Sumach.*

On the *moor:*

Gerardia maritima—*Seaside Gerardia*
Hibiscus Moschatos—*Swamp Rose-Mallow.*
Kosteletzkya Virginica—Species of *Swamp Mallow.*
Statice Limonium—*Sea Lavender.*
Iva frutescens—*Marsh Elder.*
Spergularia rubra—*Spurrey Sandwort.*
Sabbatia stellaris—Species of *American Centaury.*
Pluchea camphorata—*Salt-marsh Fleabane.*
Atriplex hastata—*Halberd-leaved Orache.*
Obione arenaria—*Sea Orache.*
Salicornia mucronata—Species of *Samphire.*
Salicornia herbacea—Species of *Samphire.*
Chenopodina maritima—*Sea Goosefoot.*

In *brackish marshes*, between the beach and moor:

Ranunculus cymbalaria—*Sea-side Crowfoot.*
Discopleua capillacea—*Mock Bishop-Weed.*
Elodia Virginica—*Marsh St. John's Wort.*
Montelia tamariscina.
Hydrocotyle umbellata—*Umbellate Pennywort.*
Ilysanthes gratioloides—*False Pimpernel.*
Samolus Valerandi—*Water Pimpernel.*
Hypericum Canadense—Species of *St. John's Wort.*

On *moor's edge* and in *copses:*

Ascyrum Crux-Andræ—*St. Andrew's Cross.*
Teucrium Canadensis—*Wood Sage.*
Phaseolus diversifolius—Species of *Kidney Bean.*
Apios tuberosa—*Ground Nut.*
Myrica cerifera—*Bayberry*; *Wax Myrtle.*
Galium pilosum—*Hairy Bedstraw.*
Asclepias tuberosa—*Butterfly Weed.*
Asclepias incarnata, var. Pulchra.
Eupatorium; E. rotundifolium; E. pubescens.
Gnaphalium purpureum—*Purplish Cudweed.*
Monarda punctata—*Horse Mint.*

(On the opposite edge of the moor, not far from the bridge at Absecom Station, are to be

found, in addition to many of the above.—*Sabbatia chloroides*, *Gerardia purpurea*, *Rhexia Virginica*, etc.

[We do not know that we can add to this list anything but *Sabbatti Calycosa*, which is found sparingly, with *S. stellaris*. This is a very interesting "find," also, as the Botany books place East Virginia as its northern limit.—Ed.]

PLANT HARDY BULBS.

BY WALTER ELDER, LANDSCAPE GARDENER, PHILADELPHIA.

The culture of *Bulbs* is one of the most fascinating and ancient branches of floriculture; and a veneration shines over it by the frequent allusions in "Holy Writ," from which we are led to suppose that all the various genera were classed as *Lilies*. Solomon fondly says of his Church: "My beloved is gone into his garden to gather lilies. My beloved feedeth among the lilies." Our Saviour tells us to "consider the lilies, how they grow; they toil not, neither do they spin, yet even Solomon in all his glory was not arrayed as one of these." How very beautiful and fragrant are the blooms of bulbs!

Snowdrop is the earliest harbinger of spring, and braves the storms of February in performing its office. The fragile and dwarf *Crocus* follows, with colors, yellow, purple and white, and draws the bees from their hives, to give us an early taste of music and beauty combined. *Crown Imperial* and *Hyacinth* simultaneously come next—the former with crowns of yellow, orange, and gold. Some have their stems and leaves variously striped with yellow and green, and orange and green, as beautiful as flowers. *Narcissus* and *Tulip* follow together. Narcissus shows yellow largely, and its whites are most sweetly perfumed. The gaudy and inimitable tulip surpasses all other genera with the diversity and fine markings of its blooms, which last until the *Rose* shows its colors; and before its profusion of bloom is over, the white and the Orange Lilies are in splendor. (We remember when there was a vacancy in summer, and another in fall, of bulb blooms; but now *Japan Lilies*, *Gladiolus*, and *Iris* fill the gap of summer, and *Tigridia* fills up that of the autumn. So now our bulbs give us an unbroken chain of blossoms from February to the latter end of November, in this latitude.)

The present wonder and glory among bulbs is the great golden lily, called *Lilium auratum*; the flowers are eight inches in diameter, the ground white, spotted with purple, and striped with gold.

Ornithogalum and *Ranunculus* are of numerous species, sweetly perfumed, and very beautiful. Tuberose comes last. The bulbs of Gladiolus, Iris, Tigridia, and Tuberose are planted in spring, and dug up in fall, and kept warm and dry all winter. (Mr. Peter Henderson is correct in stating that if the tender bulbs are too long kept in a cold place they do not bloom so well.) All the other genera are hardy, and the bulbs are planted in fall. October is the chosen month to plant, by skillful amateurs and gardeners; as the soil then, and for two months, is warmer under the surface than the atmosphere, and the roots make numerous fibres before the ground freezes up; and by that time they grow stronger, and bloom more profusely in their seasons. A sprinkling of salt put over the surface after planting, gives greater thrift to the plants, and beauty to their blooms; and just before severe cold weather, spread manure over the beds or patches.

Bulbs flourish upon almost every kind of soil, made rich with manures; and as different kinds of soils require different kinds of manures for the benefit of other crops, so is the case with bulbs. That old fogy rant, which is still published in catalogues, that great quantities of *cow dung* must be dug in the soil to ensure success in bulb culture, has become obsolete fifty years ago. Who can always get great quantities of slushy cow dung? The common culture and care given to other crops will insure success in growing bulbous flowering plants. Our seedsmen and nurserymen throughout the nation import and sell bulbs; no one should buy them from auctioneers.

We have received the Bulb Catalogues of Louis Van Houtte, of Ghent, Belgium, and of E H. Krelage & Son, Haarlen, of Holland, (who are extensive growers of bulbs for sale,) from which we learn that the past summer has been most favorable for ripening the bulbs, and that there will be no risk of loss by rot in transporting them to America. The time now, from packing in Holland to the unpacking in our Atlantic States, is only three weeks.

Henry A. Dreer, of Philadelphia, who has lately been on a tour among the nurserymen and bulb growers of Europe, certifies the conclusions that the bulbs are well ripened, and a great many new varieties, of superior excellence, are coming to us. So there is every inducement to the lovers of flowers to decorate their gardens with bulb blossoms.

EARLY GOODRICH POTATO.

BY J. M.

The Early Goodrich Potato, this year, has proved itself very superior to that of last season in quality. As well known around Philadelphia, last year they were so pasty as to bring much less per bushel, in price, than most others; but at the present time mine, and, as far as heard from, my neighbors', compare favorably with favored sorts. I have not a large garden, but for trial I planted three rows of 150 sets each,—one row of "Early Goodrich," one of "Jackson White," and the other with Mercers, on the 9th of April. The Goodrich ripened first. I commenced using them on the 25th of June. The "Jackson White" were second, and the Mercer last. As regards productiveness, the Goodrich yielded 3¾ bushels, Jackson Whites 2½ bushels, Mercers 3¼ bushels; but of these it should be said, that the Jacksons were nearly all of large size, whilst fully three-fourths of a bushel of Goodrich, and one-half bushel of Mercers were too small in size for table use. In regard to quality, the preference, if any, is now given to the Goodrich, while last year they were inferior to any I have named. The fault of the Goodrich I think to be its producing so many small tubers; but this is less an objection in early summer, when they do not need peeling, than after they are ripened.

GARDENING IN TEXAS.

BY MR. S. B. BUCKLEY.

Although gardening here does not generally receive as much labor and care as it does from many northern people,—especially those who have market gardens near large cities,—among the farmers of Texas, yet we have many, very many good gardens. Some of our gardens, in the variety and excellence of their vegetables, and the number and beauty of their flowers, are superior to those commonly seen in the northern States. Here, ladies often superintend and work in the garden, and ladies generally appreciate better good vegetables, and enjoy more the beauty of flowers, than men. Previous to the late civil war, it was customary, throughout the entire South, for planters' wives and daughters to have charge of the garden. It received much of their care, and was tilled under their direction. This custom still extensively prevails in Texas. Under the superintendence of ladies, some of the finest gardens and grounds in the entire South were made. Many of those in the vicinity of Charleston, S. C., and Savannah, Ga, were thus formed. To specify examples in other places, we mention the Preston or Hampden garden, as it was, at Columbia, S. C., before the war; also the "Magnolia Grove" garden of Mr. Brown, beneath the hill on the banks of the Mississippi, at Natchez, Miss. I have seen many beautiful gardens in the Northern States, but never anything equal to what these were in 1858.

To return to Texas. Our climate and soil is better suited to gardening than that of the North. Here we can grow all the vegetables and flowers cultivated at the North, also many others of a semi tropical nature. Two crops of the same species of vegetables can here be grown in the same season. Many people in Texas consider August the most important in the year to make garden, because many vegetables then sown or planted attain maturity, and their greatest perfection, during the cool months of Autumn, such as cabbage, broccoli, cauliflower, kale, savoys, endive, brussels sprouts celery, etc. Then (August) melons and cucumbers are again planted, also beans and peas. Then, and in September, are sown radishes, lettuce, curled and water cress, parsley, onions, parsnips, spinach, carrots, leeks, beets, etc.

In our own garden, we had green peas and beans in April, green corn in May, also summer squashes and cucumbers; lettuce and radishes in March; white potatoes the first of June, and sweet potatoes the first of August. Indeed, with a little care, by planting in succession, we can have in our garden a plentiful supply of fresh vegetables for table use during the entire year. This is a great advantage, which is not generally appreciated here. Our melons are delicious. One watermelon, weighing sixty pounds, was sold in the market at Austin, this summer. Watermelons become ripe here about the last of June, and last until frost, which generally comes about the last of November. They are remarkably healthy, and much superior in taste to those grown at the North.

ON THE LAWS OF SEX IN PLANTS.

BY THOMAS MEEHAN, GERMANTOWN, PA.

[The following paper was read before the American Association o the Advancement of Science, which commenced its sessions in Salem, Mass., on the 19th of August.]

In my paper on *Adnation in Coniferæ*, read last year, I believe I established the fact that the stronger and more vigorous the axial or stem growth, the greater was the cohesion of the leaves with the stem. By following the same line of observation I have discovered some facts which seem to me to afford strong probability that similar laws of vigor or vitality govern the *production of sexes in plants.*

If we examine Norway spruces when they are in blossom in the spring, we find the male flowers are only borne on the weakest shoots. The female flowers, which ultimately become cones, only appear on the most vigorous branches. As the tree grows these strong shoots become weaker, by the growth of others above them making it shadier, or by the diversion of food to other channels and thus as these shoots become weaker we find them losing the power of producing female flowers; and the law in this instance seems very clear that with *a weakened vitality comes an increased power to bear male flowers*, and that *only in the best conditions of vegetative vigor are female flowers produced.*

The arborvitæ the juniper, the pine—in fact all the different genera of coniferæ that I have been able to examine—exhibit the same phenomena; but the larch will afford a particularly interesting illustration. When the shoots of the larch have a vigorous elongating power, the leaves cohere with the stem. Only foliaceous awns give the appearance of leaves. When they lack vigor, lose the power of axial elongation, true leaves, without awns, appear in verticils, at the base of what might have been a shoot. Every one is familiar with these clusters of true leaves on the larch. In the matter of sex, an examination of the tree will show the following grades of vigor: First, a very vigorous growth on toward maturity, or the age necessary to commence the reproductive processes. The reproductive age is less vigorous. Taking a branch about to bear flowers, we find somewhat vigorous side branches, with the usual foliaceous awns. The next year some of the buds along these side branches again branch, but the evidently weaker buds make only spurs with leaf verticils. As these processes go on year after year the verticils, become of course, shaded by the new growth, and get weaker in consequence, and thus, in the third year, some of these verticils commence to produce female flowers, or a few of the very weakest may bear male ones. But only in the fourth or fifth year, when vitality in the spurs is nearly exhausted, do male flowers appear in very great abundance. Indeed the production of male flowers is the expiring effort of life in these larch spurs. They bear male flowers and die.

What is true of coniferæ seems also to exist in all monœcious plants. In the *amentaceæ* the male flowers appear at the first expansion of the leaf buds in spring, as if they were partly formed during the last flickerings of vegetative force the fall before, but a vigorous growth is necessary before the female flower appears. In *corylus*, *carpinus*, *quercus*, *corylus*, *juglans*, *alnus*, and, I believe, all the common forms of this tribe, we find the female flowers only at or near the apex, or first great wave of spring growth, as if it were the culmination of vigor which produced them, instead of the decline, as in the male. Some of these plants make several waves of growth a year, each successively declining in vigor, and thus the cones do not appear on the apex of the young shoot, but on the apex of the first and strongest wave. This beautiful illustration of the connection of vigor with the sexes can be seen particularly in *Pinus pungens*, *P. inops*, *P. mitis*, *P. rigida*, and perhaps some others.

In the larch and white spruce for instance, a second wave will often start after the cone has commenced forming, and the singular appearance is presented of a shoot growing out of the apex of the cone. These varying waves can be also seen in *cyperaceæ*, sometimes placing the male and sometimes the female at the apex of the culm, but always the female in the greatest line of vigor. I do not know of any case where the sexes are separate on the same plant that extra vigor does not always accompany the production of the female and an evidently weakened vitality the male parts.

Mere vigor, however, will not always indicate the degree of vitality. The *pinus mugho* seldom exceeds ten feet high, and its shoots are not near as vigorons as its near relative, *pinus sylvestris*; and yet it commences its bearing age by a free and vigorous production of female flowers. But power of endurance is a high test of vitality, and an Alpine form should possess this in a high degree. In its relation to sex this form of vital force will also have an interest. The vitality of a tree is always more or less injured by transplanting. Sometimes it is so injured that it never pushes into leaf again. It always pushes out later than if it had not been moved, and in proportion to the injury to the vitality is the lateness of pushing. Clearly, then, earliness of pushing forth leaves is a test of vigorous vitality. Now, some Norway spruces push forth earlier than others. There is as much as two weeks difference between them, and it is remarkable that those which push out the earliest—may we not say those which have the highest powers of vitality?—are most productive of female blossoms. Arboriculturists may make good use of this fact. Norway spruces, which have a drooping habit, are the heavy cone bearing forms. No way has before been discovered to detect them until they get to a bearing age. Now it will be seen, the earliest to push forth in the spring will be cone-bearing or weeping trees.

It is not so easy to see the influence of vigor or other forms of vitality, as affecting the sexes in hermaphrodite plants as in monœcious ones, yet here are some remarkable facts of a similar character. In some flowers the forces which govern the male and female portions respectively seem nearly equally balanced. Then we have a perfect hermaphrodite—one with the stamens and pistils perfect, and one communicating its influences to the other—a self fertilizing flower. In many species, however, we notice a tendency to break up this balance. It becomes either a pistillate or a staminate, either by the suppression or greater development of one force or the other. If the force is in the female direction it begins by requiring the pollen from some other flower to fertilize itself. If in the male direction by increasing the number of stamens, or converting the stamens into petals. The interest for us in this sexual question is to note that just in proportion as the sexes diverge in this manner, in just the same ratio do vigor and strong vitality follow the female in the one case, and weakness the male in the other.

In the male direction, for instance, when the flower becomes double by the conversion of stamens into petals, or the number of either increased, growth is never so strong, and life is more endangered. Double camellias, roses, peaches, and other things have to be grafted on single ones, in order to get more vigorous growing plants, and every florist knows how much more difficult it is to get roots from a double-flowered cutting than from a single one. Sometimes the male principle, which loves to exhibit itself in the gay coloring of the petals, seems to influence the leaves also; and they also become colored or variegated; and here we see also a weakened vitality follows. Variegated box, variegated euonymus, or any of similar character, never grow so freely, or endure the winter's cold or the extremes of climate like the green-leaved forms.

On the other hand, when the balance goes over in the female interest, we see it characterized by greater vigor than before. It has long been noted that pistillate varieties of strawberries are more prolific of fruit, but this rule is not always good, as sometimes the runners, which are parts of the feminine system—a form of viviparous flower shoots, in fact—regulate the amount of fruit. But it is a fact universal, I believe, in its application, that the production of runners and fruit combined is always accompanied by a vigorous vitality.

So in *viola*, where we have female influence variously expressed, from the underground stolon or creeping runner, which reproduces without impregnation, to the apetelous flowers which mature abundant seeds on the smallest possible quantity of pollen, up to the perfectly favored hermaphrodite flowers of spring—all regular grades of one identical female principle, in contrast with those species which maintain throughout a closer connection with the male principle, by maintaining pure hermaphrodite flowers through their whole stages; we find those possessed of the highest type of vitality which are evidently the most under the laws of female influence.

In a brief paper like this, it is not my purpose to introduce more of the facts I have observed than will sustain the theory I have advanced. I do not wish to urge it for adoption; my object is to excite investigation on the part of other observers, who will, I think, find everywhere about them that, wherever the reproductive forces are at all in operation, it is *the highest types of vitality only which take on the female form.*

I have confined myself to sex in plants, botany being my special study. Do the same laws prevail in the animal world? I think they do. But this being out of my more favorite province I dare not discuss it, but content myself with the bare suggestion.

DISEASED GLADIOLUS AND FUCHSIA.

BY CHRONICLER.

The disease of your lady correspondent's *Gladiolus* is caused by a *fungus*, which attacks the bulbs in winter, when kept in a too low temperature, or a too moist atmosphere, and corrodes the bulbs into their hearts. It is often seen upon lily bulbs, and grows so rapidly as to spread between every scale. Brushing it off the outside does some good, but when it has eaten into the interior, it cannot be readily got out. As prevention is better than cure, the bulbs should be kept in boxes, with dry soil or sand under and over them, and in a dry closet or upper shelf of a greenhouse, where the tem perature will seldom get below 45 degrees, and the air will be dry. One or two dozens of bulbs may be kept in segar boxes, with an inch of soil or sand under and over them. If frost should get into a house or greenhouse, it will not reach the bulbs among the dry soil, and the lid upon the box ; and in daytime, the fires in the dwelling-house, and sunlight in the greenhouse, will raise the temperature, expel the frost, and dry the atmosphere also. It is not the little cold air or moisture, but the length of time the bulbs are kept in them. So all tender bulbs should be kept dry and moderately warm during winter, to ensure success,—say Gladiolus, Iris, Amaryllis, Tigridia, and Tuberose. A cellar is not a good place to keep them, as the air is too moist, and often foul, and sometimes becomes too cold. Even roots of Dahlias, beets, carrots, and tur nips rot off by the too moist atmosphere of good cellars. These facts are generally known by observing gardeners.

The disease of *Fuchsias*, in midsummer, is caused by too great heat, and too much dryness. Shade from sunshine is a saving to them ; and a plentiful supply of moisture at their roots, and by showering water over their heads every dry evening, they are less effected by the great heat The Fuchsia delights in a moist soil, moist atmosphere, and temperate climate ; and of course it flourishes best in spring, early summer and fall months. It thrives admirably as an undershrub with us. In Great Britain, from London to Perth, in Scotland, it grows out-doors without winter protection, and as large as our currant bushes, and blooms abundantly many months in the year. It is such a beautiful, blooming genus, and of so many diversified species and varieties, all our lovers of flowers should give it shade and much water during July and August, and it will well repay the care.

PREPARATION OF VINE BORDERS.

BY W. L., GARDENER TO J. C. LACKEY, LUTHERVILLE, MD.

The border both within and without the house, should be prepared by being in the first place excavated to the depth of three feet, and rendered perfectly dry by draining or otherwise ; and this should be done in a substantial manner, for after they are formed, and the vines planted, it cannot be so effectually done. And it is of the utmost consequence to the future welfare of the vines, that they should be placed on a dry bottom. Their roots naturally extend to a great distance in quest of nourishment, and are therefore apt to penetrate beyond the limits of borders which are too scantily formed for them either in depth or breadth. When they extend beyond the limits of prepared borders, if the soil be naturally cold and damp, the fruit will not be of fine flavor, and consequently many of the berries will shrivel, assume a sickly color, and ripen prematurely and be not only destitute of flavor, but actually-sour. The foundation of the border should be well drained, and a floor constructed so that that the roots cannot penetrate it ; over this floor, a thick stratum of lime rubbish or similar matter should be laid, over which the border should be formed of light rich loam, well ameliorated by frequent turning over and exposed to the atmosphere; to this loam, however rich in itself, a moderate quantity of well decomposed dung should be added, and the whole brought to a sufficient degree of lightness by the addition of well prepared vegetable mould, to which may be added a portion of lime rubbish, broken bones, shells or similar matter.

A compost of half good loam soil, with its turf cut from old pasture land about three inches in thickness, one quarter of rich old dung, one one quarter lime rubbish and bone, with leaf mould to make it sufficiently light, will be found to answer all the requirements of the grape vine.

TRENCHING FOR ROSES.

BY MR. GEO. SUCH, SOUTH AMBOY, N. J.

So far as I have noticed, the very dry weather of this summer is producing an unusual amount of mildew among the Roses. As I happen to have *one* bed of hybrid perpetuals, all of which are in the most perfect health imaginable ; free from even a suspicion of mildew during all the dry heat, it will interest many of your readers to know how this result has been obtained. It is simply by *trenching*.

The soil in this bed would, by most persons, be considered extremely unfavorable for growing good Roses, being really nothing but light sand, such as is looked upon as just the thing for sweet potatoes. Two years ago last spring it was trenched 20 to 24 inches deep, and very liberally manured with ordinary stable manure, the Roses being then planted a little more than three feet apart. They made a rapid growth, and towards the end of November were deeply mulched with strawy manure, all of the mulching being removed about about the first of April. Last year the bloom and growth were both admirable. They were again mulched during the winter, and as soon as the mulching was removed in the spring, the Roses were pruned and the shoots pegged down in such a manner as to completely cover the bed.

Such masses of rich foliage and superb blossoms as they produced last June, can hardly be imagined, and were worth almost any amount of trouble to procure. And, as I said before, the foliage is still in perfect health, in spite of the extreme heat and dryness ; for the roots run far down into the coolness and moisture of the deep soil.

THE CACOON VINE.

BY L. B., PHILA.

I may perhaps give you a clue to the "Cacoon," without being able to fully solve the problem. With characteristic infelicity as regards all material things, and hundreds of products long known in commerce, the regular dictionaries are silent as to the "Cacoon Vine." Nothing of the "Cacoon" or "Cacoon Vine" in Webster, Worcester, Ure, Macgregor, Haydn, Ash, Sinerine, Nunezde Taboada. Simmonds' Dictionary of trade products, says "*Cacoon*," a name for the seeds of the *Entada gigalobium*, which are used for making purses, scent-botties, &c.

I have before me a singular fibrous frame of a fruit, brought recently from Nassau, which has a resemblance to the fibre described. It grows on a vine like the cucumber ; a low running, and rooting vine, with leaf and habit of the cucumber vine. The vine is now growing in my garden from seed planted this spring, but has as yet no blossom or fruit. The fruit is said to be in color and appearance very much like the cucumber, and the fibrous skeleton now before me has the precise outline and form of a cucumber, 8 inches long and 2½ inches in diameter. There are three principal lobes, in which the seeds are arranged ; now open holes through the fibrous net ; and the external form has 16 sub-lobes, giving it a striking resemblance to a 16 rowed ear of corn. The fibre is clean, white, and strong, the size of a No 40 spool thread of cotton, and so fimly interwoven and tied throughout, that it is, when dry, quite firm in its shape. When wet, it can be drawn out in any shape. I understand, though, the single specimens I have belonging to the lady who brought it, is too precious to experiment on.

I think this is Cacoon, and the vine the Cacoon vine ; though the spanish name is *Estrapajo*, and the common name in Nassau, is "Guinea Sponge."

The fruity portion is said to be gummy and tenacious, but easily dissolved and washed away, being also intensely bitter, and having medicinal properties. The fibre of this singular product is certainly very valuable ; being very light, clean and strong, and as the vine fruits with great profusion, large quantities can be gathered. The vine grows very luxuriantly, and promises to show blossoms and fruit, even in my garden, very soon. The seeds are black, flat, and somewhat like small watermelon seeds.

Should this reference give you a clue to it, and you wish particularly to see the specimen of the most remarkable of all fibres ; being the skeleton of a perishable soft fruit. I will endeavor to get the owner's permission to send it to you.

AMPELOPSIS VEITCHII, AND SPIRÆA LOBATA.

BY WM. CHARLTON, ROCHESTER, N. Y.

Ampelopsis Veitchii.—I received this beautiful climbing plant from England last spring, and am well pleased with it. It is a miniature foliaged Virginian Creeper, or as it is sometimes called, American Ivy. It will no doubt prove entirely hardy here, and will be much sought after, as it becomes more known ; it is I think the very best plant that I am acquainted with for baskets and vases, as there is nothing trashy or weedy in its character. It was sent out for the first time August 1st., 1868, by the Veitchs of Chelsea, Eng., who thus describe it: "A

miniature foliaged Virginian Creeper, which clings to any building with the tenacity of the strongest Ivy, and producing in great profusion its dense foliage, of a glossy green, shaded with purple, cannot fail to command *great attention*. It is of exceedingly rapid growth, requires no nailing, and from *earliest spring* it produces its beautiful purple tinted leaves so thickly, as to form the most perfect coating wherever it is planted, the young shoots being quite purple The leaves are sometimes divided into three parts, and are sometimes entire, turning red in autumn similar to the old kind."

I would add that the foliage is almost identical with the foliage of Begonia parviflora, and almost all the foliage on my specimen plant (in a pot) is about the same size.

Spiræa Palmata—In the September number of the *Monthly*, you make an extract from the *Gardener's Chronicle*, (English,) calling attention to this evidently fine herbaceous plant, which is being distributed in England this fall for the first time. I am happy to say that I was fortunate last spring to receive three plants of it from Mr. Charles Noble, who owns the entire stock. These plants have made a fine growth the present season, and I hope to be able to report on their blooming qualities next season.

[We saw the Ampelopsis recently at Mr. Hunnewells, and can add our testimony to Mr. Charlton's, that it is a very valuable addition to our catalogue of hardy climbers—hardy, as we suppose it will be.—Ed.]

NEW MODE OF BUDDING.

BY J. W. VANZANDT.

When sap is in a flowing state the bud is cut square off at at each end, and flattened with a concave to fit the convex of the line. A piece of the bark the size of the bud is cut out, and inserted so as to make it fit. It is held with a cement of my own invention ; and when it is seal-



ed, tie it with candle wick. Budded fifty in this mode, and not one of them missed growing. Can bud the rose as successfully as the apple or pear. Send you a bud fitted for the work. It can be held with a preparation of gun cotton and collodion : this forms water-proof cement.

EDITORIAL.

PARENTAGE OF GRAPES.

In the course of our peregrinations this year, we dropped down on Hammonton, New Jersey, and in the grounds of Colonel Moore saw two seedling grapes, about which are some matters of more than ordinary interest.

Mr. Moore gives the following account of them. A few years ago, when living in the East, he grew a Concord under glass with his foreign grapes. He cut off the stamens from a bunch of the Concord, and some time after shook a bunch of muscadine flowers over them. The seeds were sown, many came up ; and, being in the garden without protection, all but five were killed in the winter. The two we saw in bearing were from these five, and were brought to Hammonton by their owner.

There are no traces of the foreign vine in these two seedlings. It is not generally known that the petals of the grape cohere and enclose the stamens in such a way, that unless the flowers for cross imgpregnation are taken early, and the petals and stamens cut away together, the flower is very likely to fertilize itself. By waiting in this instance until the stamens had expanded, self fertilization had no doubt been effected. So far then as this cross with the European is concerned, the evidence is lost. There is a bare possibility that some other grape seed may have been in the ground on the exact spot where these grapes came up. This is so slight however, that we think we may take it for certain that these grapes came from a Concord parent, under circumstances which make it highly probable that it was self-fertilized, and yet we have *two seedlings as different from Concord* as they well could be—one has a bunch like Clinton, the berry like Clinton, even to the red stem when the fruit is separated from it. The leaf formed very much like Clinton ,small like Clinton, the young shoots having long slender wiry shoots when they get on the ground, just like Clinton ; but the under surface of the leaf *downy*, and in this *not like* Clinton,nor like any of the species (*Vitis Cordifolia*) which Clinton popularly is supposed to belong to This the owner calls the "Conqueror." The other, the "Challenge," has very much the same character as the other, but the fruit is brownish red, or a deep "Delaware" color.

Now the great interest is from the fact that many modern pomologists doubt the correctness of Van Mons' conclusions, because it is possible the *varieties cross fertilized themselves in the orchard*, and therefore what V. Mons attributed to "progressive development" should have been credited to hybridism, or more correctly crossing of varieties. In this case it seems highly probable that the Concord without any cross fertilization, certainly not from any native sort, has not only departed widely from its parent,but in every respect but one, and that (a woolly under surface) a very trifling one, has *travelled out of the species* even, into a widely different one. From *Vitis Labrusca* to *Vitis Cordifolia*. We ought perhaps to note as another point of difference in the brown grape, that some berries had a strong musky flavor, not the disagreeable "foxy" flavor so often complained of ; but yet enough to show its *Labruscan* origin.

There was another point too which gives value to the grape as well as showing the relationship to Clinton in which direction it had travelled in this. The Concord has been an entire failure from rot on Mr. Moore's grounds,but the Clinton is a success, as also are these two grapes ; and all are growing together side by side. An immense amount of printer's ink is wasted in discussion about horticultural truths, simply because, close, minute,attention to guard against error is not given in horticultural experiments. In nothing has this been more illustrated than in questions concerning the powers of fruit, and especially powers to hybridize, or to take wide forms without hybridization. In the case of the Rogers' Hybrid grapes for instance, it will be remembered that Mr. Barry has always contended they are not hybrids. It has been argued that it is impossible so many good and different forms could have been raised from one poor grape without hybridization. The present experience seems to show they can ; and if this alone fixed the character of the hybrid grapes, many of us would have to recant and go over to Mr. Barry's side.

Aside from these considerations the "Challenge" and "Conqueror" are two good grapes, no better perhaps than scores of others which have been brought out ; but better than a great many for which high prices have been paid, and Mr. Bassett who has the ground on which we saw the grape, is doing well in disseminating them.

THE MEXICAN EVERBEARING STRAWBERRY.

We find the following in the *Practical Farmer:*

New Alpine Strawberry.—Did not the usually careful editor of the *Gardener's Monthly* make a slight mistake, when he spoke of there being 200 *bushels* of this new variety per acre? Of course it could be only conjecture, but was not the *guess* of the quantity *rather a lively one?* 6,400 quarts to the acre is a pretty fair crop, even of the large varieties. If E. Satterthwait, who raised a large crop of Agriculturist this past season, which he sold at 75 cts. and $1 per quart, and which being a big strawberry, measure fast, had approached this quantity, (6,400 quarts,) he must have made considerable money.

We rather think that the guess that this variety was a humbug, its introducers swindlers, and its advertisers corrupted bribe suckers, was rather *a lively one*,—not quite so lively as exhibited by a celebrated jumping insect which when John's fingers were dashed down on him, *was not there;* for this "lively guess" from those who never saw it, has been considerably crushed by those who have, although some remarkable jumping has been attempted. We did not speak of 200 acres as "there being ;" that would not be true,—but we did say that probably two hundred bushels could be gathered from an acre of these *through the whole season.* We made no comparison with Mr. Satterthwait's or any other person's strawberries, and are not disposed to follow in the wake of some friends who are sending challenges, and making wagers ; but we are quite sure that if those who are sincere seekers after truth, will take fifty Agriculturists and fifty Mexican Everbearing and plant them side by side together, they will find that after an ac-

curate measurement taken *through the whole season*, they will find this Mexican Everbearing *beat* the Agriculturist in productiveness, in one year from planting; perhaps we may be mistaken in this; but we think not.

We are very much surprised at the way this strawberry has been attacked. For our art we thought that it was an old and worthless variety. We felt so sure of this that we did not like to stop on our way to see them. It is painful to us to condemn anything, though we never hesitate to perform a public duty. We turned a little out of our course to see them, feeling like a good hearted sheriff, who expected to have to hang a man who had never done him any harm. We found it just as we have already described; but we said *nothing until we saw it.*

No doubt those who attacked without knowing, feel sore under the fast developing facts. We do not wish to add one word to their mortification. even Mr. Elliot whom we think has none but the highest christian reasons for forgiving his opponents on this question, we have no doubt will forget, if they will *handsomely back down*, and exhibit as much respect for their co-laborers as to prove themselves right. On the other hand let those who think they have won, not be led by their enthusiasm to over praise their fruit. The public may rely on this being the true state of the case:

First, it is a greater bearer than any variety of Alpine known.

Second, it is easily distinguished from other Alpines, by the first fruits of the season being longer and more cylindrical than any Alpine variety known *to the writer.*

Its disadvantages are that eaten from the vine the fruit is rather pasty, but this is compensated for by a delicious aroma which with the usually creamy admixtures makes a feast for the gods; and for a strawberry short cake is too good even for many of them.

Then it is small, the largest only reaching up to an average Albany; but this also is compensated for, by the hull being left on the vine in the picking; so that if the hulling be taken into consideration, a quart of these takes no longer to get to the table than a quart of larger ones. Then its everbearing character is an advantage to some. To us at least a quart of strawberries fresh from the vine in September would be a treat; even if they did *cost a dollar.*

Yet there will be many write next year of their dissapointment. A couple of years ago there was much excitement about tomatoes. A friend wrote that he had been "humbugged," we hate to write this word. We happened to be near his place place a few days afterwards, and stopped to see it,—*it.*—a solitary plant, within four feet of the trunk of a large maple tree, with even the rag weeds by which it was surrounded, withering for the want of water!!

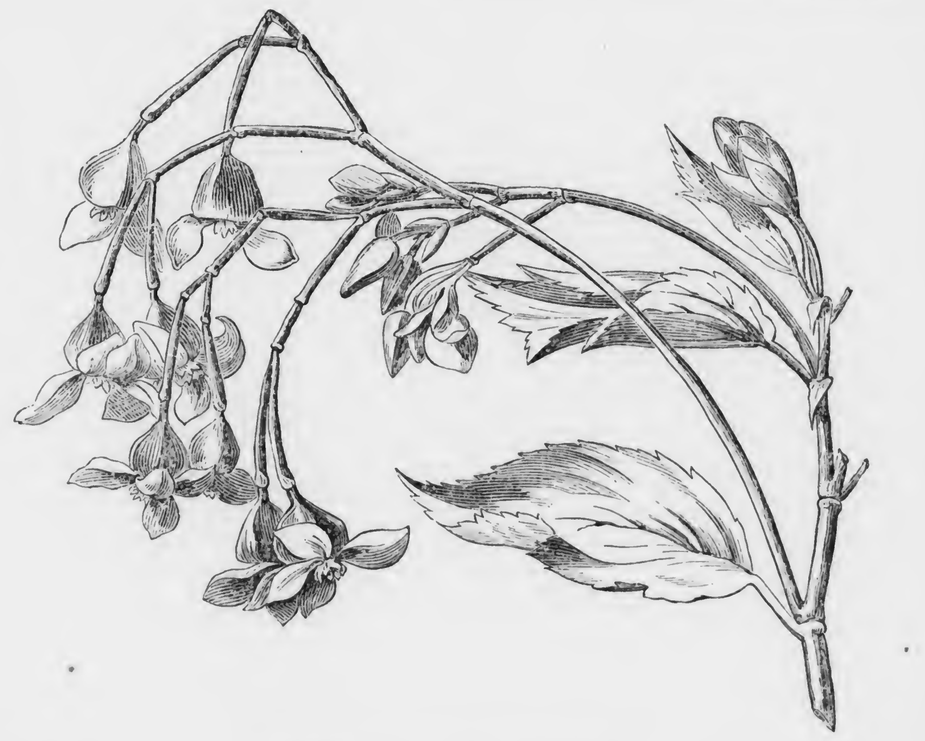
Such are our experiments! such are our experimentors! If the "Mexican" does not get some of these, especially with so many theories to prove true, it will be a more wonderful one than the Alaska, for which we are in treaty, and are willing to pay so much.

We enter fully into this matter once for all, because we do not wish to classed as an advocate of this berry, or an opponent of those who wish to attack it. We have no controversy, but record the facts.

WEALTHY VINEYARDISTS.

It is a curious commentary on "scientific" grape culture, that while a man is poor he can usually grow good grapes, but as soon as he becomes rich he succeeds no longer. We know one who had pretty good success with his grapes, along a very steep hillside, and then, finding the "soil and climate" good, invested several thousand dollars in terracing, manuring, and subsoiling, according to the most perfect instructions laid down in the books, and he has never had a grape since. He is quite sure the "climate" has changed the past few years, and that "it is no use to try to grow grapes in this part of the country." We may see the same obvious "change of climate" at Cincinnati, St. Louis, and other grape centres. Germans, who come fresh from the Rhine, where the labor of cultivation is too great for the men, and only women can be found to carry earth in wicker baskets up the steep hillsides, to the little nests quarried out in the high ridges for the grape to grow in, succeed remarkably well for a time. As they inhale the rich American atmosphere, and find their breech bands and pockets, in mutual sympathy expanding, comes withal a desire to "do the thing right." From henceforth they find they have an up-hill task, while their success correspondingly descends. Bye and bye one reaches the top of the mountain, sees his fortune at the bottom, and finds "his climate not adapted to grape culture."

Once in a while, however, we see one whom success does not spoil. On the railroad from Pittsburg to Cleveland, perhaps twenty-five miles from Pittsburg, is a steep, rocky bluff, facing the Ohio river, we see a case in point. It is capped by an elegant mansion, of a somewhat castellated form. How any one reached the top was not easily understood, but doubtless some balloon arrangement, simplified by Yankee genius, does that business thoroughly and well. Passing rapidly on the train, we cannot, of course, give more than approximate figures, but we should think the hill was one hundred and fifty feet high, and yet not more than one hundred feet back, in a horizontal line, from the railroad track. This will give an idea of the steep acclivity of this hillside. This was the place for terraces, narrow terraces, which could never be deluged with water; and here were just such terraces as would delight the eyes of a genuine Rhinelander,—the surfaces even of these sloping



[BEGONIA SANDERSII, *See page* 304.]

so much that any but a genuine son of Faderland would wonder how water could get in, even under the heaviest rain storm, to say nothing of staying there after it did get in. Yet here, on these bluffs, facing the sun, where even a crop of corn would dry out nine years out of ten, were vines with a promise of fruit which even a look at would be enough to intoxicate Bacchus, though well used to hard drinking, as by all accounts he must have been. This man is evidently rich, but he could not do otherwise than he did. It would have taken even his immense fortune to spoil that hill. That he has succeeded may, therefore, be no thanks to his "intelligence." "Climate and soil" is therefore all right for the present; and we rather guess if he will not be above the practices of the old country German women, and carry up a little manure once in a while, in a little wicker basket across his shoulders, his "climate and soil" will not change for many years to come.

BEGONIA SANDERSII A BEDDING PLANT.

(*See Engraving.*)

It has here been noticed that many of the beautiful bedding plants of England, are quite unsuited to our climate. With the first very warm days, these plants suffer, and they soon dwindle away

In searching for our own bedding plants we have to look chiefly to the tropics for materials. Hence for us Coleus, Achyranthes, Dracænas, Cannas, Madagascar Periwinkles, and so on, suit us best in all the Middle and Southern States. Every year some new addition is made of these plants, and our list though different, will soon be as full as that of England.

One of the best things we have seen this year is *Begonia Sandersii*—Its color is rich carmine, and it continues to bloom freely from May till frost. It has hitherto been supposed to do only under glass. Most Begonias especially the colored leaved varieties do seem to prefer to be under a glass shade during summer, the hot sun seems to yellow their leaves. This variety however, in a free light soil endures the hot sun very well. Begonias are natives of Mexico and Brazil; but this variety we believe, is a hybrid between *B. fuschsoides* and *B. incarnata*. They bear male and female flowers on separate trusses. Our illustration is of a truss of female flowers.

THE AMERICAN POMOLOGICAL SOCIETY.

As we write, the session of this society is being held, in connection with the Pennsylvania Horticultural exhibition in their Hall in Philadelphia, and is probably one of the most successful ever held. The number of delegates and members is so large, and the contributions so full, that probably no similar meeting ever excelled it in interest and enjoyment to all concerned. It is impossible, at this early day, and the meeting not closed, to give any details, which, as a Boston friend remarked, is nearly impossible at any rate, as there is no way of foreseeing the end of any attempt at a beginning. The fruits from Kansas, however, elicited the warmest admiration from every one, and much regret was expressed by the Committee on Fruits that by a By-law of the Pennsylvania Horticultural Society, which says "all plants and fruits for competition must be entered by the grower," and "The State of Kansas" not being considered a competitor as an "individual" under this rule, that they could not award premiums to them, except as "specials," for their superiority in many cases was freely acknowledged. Much praise was also given to the Kansas delegation for the handsome manner in which the fruits were displayed, and when the State of Pennsylvania follows in the wake of Kansas, if she gets as worthy representatives as Messrs. Anthony, Kelsey, and Housley, she will be fortunate. Virginia had also some magnificent pears. The best show of grapes, however, seems to us to be from the East, instead of from the West, as one would suppose. Massachusetts was unfortunate in having a severe hurricane, which shook off thousands of bushels of fruit, but President Wilder, nobly resisting this worst of misfortunes to so enthusiastic a pomologist, made a remarkably creditable show.

It was very gratifying to this gentleman's friends to know that he would not absolutely decline a re election to the Presidency. Not to "tell tales out of school," we yet suppose there will be no harm in saying that in the large and full Nominating Committee gathered from every section of the Union, his was the only name presented for consideration, and immediately adopted, as soon as named, unanimously; and the Committee's action enthusiastically endorsed by the society. Long may he live to wear his hard-earned honors! It was also very gratifying to the Southern members that Richmond was selected for the next meeting. The following is the vote on the question, and we question whether so high a vote for one place, where so many places were naturally anxious to have the honor, was ever given before; which augurs well for the great success of the next session there:

"A vote was taken, and it was decided to hold the next meeting at Richmond. The vote stood,—for Richmond, 61; Rochester, 34; Geneva, 32; California, 24; Newport, 23; Cincinnati, 18; Boston, 17; Leavenworth, 9; Nashville, 6."

Up to the present time, little has been done beyond preliminary business. The following officers have been elected:

"President — Hon. Marshall P. Wilder, of Massachusetts.

Vice Presidents Col. R. F. Hauley, Alabama; J. H. Carleton, Ark; Simpson Thompson, California; Charles Pauls, Colorado; Col. F. Trowbridge, Conn.; Edward Tatnall, Del.; William Saunders, D. C.; L. J. Hardee, Fla.; L. E. Berckmans, Ga.; Arthur Bryant, Sr., Ill.; J. D.

G. Nelson, Ind.; James Smith, Iowa; J. S. Downer, Ky.; H. A. Swazey, La.; S. L. Goodale, Me.; C. M. Hovey, Mass.; W. D. Breckenridge, Md., Nicholas Waugh, Montana; Hugh Allen, Canada East; Dr. Wm. Housely, Kan.; Silas Moore, R. I.; Warren Foote, Arizona; Wm. Birt, Mich.; D. A. Robertson, Minn.; Gen. Wm. M. Brandon, Miss; B. F Edwards, Mo.; Fred'k Smith, N. H.; Charles Downing, N. Y.; Wm. Parry, N. J.; R. W. Furman, Neb.; Dr. de Ruythen, New Mexico; Wm. L. Steele, N. C; Dr. T. A. Warder, O.; Chas. Arnold, C. W.; Simon Francis, Oregon; Robert Buist, Pa.; Dr. J. P. Wylie, S. C.; M. S. Frierson, Tenn.; M. Talbot, Texas; J. E. Johnson, Utah; Z. Jacobs, W. Va.; J. C. Plumb, Wis.; Richard Bradley, Vt.; G. F. B. Leighton, Va.

Treasurer—Thomas P. James, Philadelphia.

Secretary—F. R. Elliott, Cleveland, Ohio.

Executive Committee — President and Vice President, *ex officio;* M. B. Batcham, Ohio; G. Thurber, N. Y.; J. E. Mitchell, Penna.; W. C. Flagg, Ill.; J. F. C. Hyde. Mass.

We think it must have been gratifying to our friends to find their fruit and deliberations so much valued by the citizens of Philadelphia.

Wednesday there were *five thousand persons* present during the day. The society was officially received by the Mayor on Thursday, and a public welcome extended to them; and Friday evening the proceedings will close by a banquet and evening entertainment. given by some individual members of the Horticultural Society, and some of the Philadelphia nursery and seed trade, including a few from West Chester and New Jersey, to the members and delegates present. We are sorry to have to go to press so soon as not to give a fuller account of what is going on, but the event has created so much interest in the minds of all classes here, that we could not let the occasion go over without these few words, at any rate.

SEX IN PLANTS.

In another column we give a paper on Sex in Plants, by the Editor of this magazine, read before the American Association for the advancement of Science, at Salem, Mass., recently. We have only occasionally republished in our columns botanical papers by this author, because abstract science is understood but by a few, and these usually read the papers in the publications in which they originally appear; but this paper *on sex*, as well as another on the *nature of axillary buds*, seem to have excited so much interest, that we give one now, and will republish the other next month.

It is curious to note that as in all new phases of Science, this new theory of the physical relation of the sexes is tortured and twisted already into the support of all sorts of *isms*, most of which the author himself would repudiate. There is one deduction, however, which seems evidently true, and which must have a great value to agriculturists, stock breeders, etc., namely, that the question of sex is one influenced by the innate laws of life, *and that no external influence has any power in determining sex.*

SCRAPS AND QUERIES.

LYGODIUM PALMATUM.—*A correspondent* says:—In the last number of the *Monthly*, under the head of *Law and Science*, the *Hartford Courant* was in error in alluding to the law passed by the Legislature, for the protection of *creeping* ferns. The fern intended to receive the benefit of the law is the *climbing* fern, *Lygodium palmatum*, not Pteris aquilina, nor Camptosorus rhizophyllus.

The writer is reminded of this by the remark of a gentleman of this city, that whilst passing through Hartford, homeward, from a trip to the White mountains, he observed large quantities of the Lygodium offered for sale in the streets, brought from the interior, and used for garlands; a few pence would buy an arm full, and he availed himself of the opportunity and procured fine specimens.

For the protection of this most beautiful and interesting species, the Legislature passed an act imposing a fine of five dollars on those who so wantonly destroyed it.

This fern is not so very rare. It is found in New Jersey in the vicinity of Brown's Mills and Quaker Bridge, also in the mountainous regions of Schuylkill Co., Pennsylvania.

Consistency.—It will be recollected that a contemporary, of whom we are said to be jealous, a couple of years ago, in order to bring into discredit the three other journals, two of the Editors of which were nurserymen, and the other a landscape gardener, advertised that the public wanted, "a journal of high tone, and edited by persons not connected with any horticultural establishment." The same concern is now selling seeds, and strawberry plants at $5 per dozen!!

California Fruit in Chicago.—We find the following paragraph from the Chicago *Republican* going through the press:

"The Chicago market is supplied with California fruit—once a rare luxury, but now likely to become as common on our tables as the peaches of St. Joe, Michigan, or the strawberries of our own State. A cargo of fruit from the Golden State arrived in Chicago on Friday, being the first fruit car through from San Francisco. The freight is $5 per cwt., or about $940 on a car load. It occupied five days on the journey, and the cargo was in splendid condition. The car load included 120 cases of plums, 50 cases of white grapes, and 150 cases of pears of different varieties. The plums are the largest and finest that have ever been seen in the Chicago market, and were grown in the Valley Nursery, Sacramento, by Mr. C. W. Reid. They are delicious in flavor, and the pears likewise are of unusually luscious quality."

The idea that these easily-raised fruits will compete with our own hard earned crops is distateful to some of our fruit growers. We think this success noted by the *Republican* is an exceptional case. A committee on a public entertainment in Philadelphia recently wrote to leading firms in Chicago for 500 pounds of grapes, and were told that, with the exception of a few pears, none of the shipments of fruit from California came in saleable condition, and it was not considered likely they would do better in future.

Madder.—The progress of science cannot perhaps be better illustrated than in the case of Madder, which, after an employment as one of the leading dyes for nearly two thousand years, has been substituted by a preparation of coal tar. Thousands of tons of madder are grown along the shores of the Mediterranean—ten thousand alone being used by Great Britain; and much thought has been given to its culture in the United States, though we believe this has not been carried out to any great extent. The discovery by Græbe and Liebmann that the coloring of madder and the anthracene of coal tar are identical, will most probably put madder culture among the things of the past.

Graft hybrids.—At the recent meeting of the American Pomological Society, during the sitting of one of the committees, the subject of Mr. Blodgett's sweet and sour apples on one tree was introduced. The theory is that Mr. Blodgett's father took buds of Rhode Island Greening and Tallman's Sweet, slit them longitudinally and fixing pieces of the two kinds together as one, inoculated the bud, which grew, and the tree bearing sometimes one, sometimes the other, sometimes both varieties in one apple is the result. It was objected by some member of the committee that there were many such trees in the country, and that it was probably a sport which Rhode Island Greening is capable of producing, but Mr. Blodgett set this at rest by stating that grafts of this tree had been freely disseminated through the country for many years past. Many good physiologists fail to see by any known law, how such an union of two halves of a bud can be possible,—on the other hand, Mr. Blodgett's powers of close scientific observation are of the highest order, and under all the circumstances we can scarcely think it impossible. It may not be amiss to say that Erasmus Darwin, uncle of the present great philosopher, and whose perceptions of nature were so far ahead of his age, that only now are many of his views becoming appreciated, in his *Phytologia*, speaks of this kind of grafting, and believed in its having been done. However, our object now is to suggest to our readers, who will no doubt, many of them be grafting apples this winter, to slit a few buds in this way and try it. There can be no reason why it should not succeed as well by grafting as by budding, and the union will be much easier made by bud grafts than by mere bark buds as in inoculation.

Acorns on the Grape Vine.—The nature of insects galls is not understood. Why the puncture of different insects on the same plant, should lead to such very different structures is so far a mystery, and yet one would suppose that if close attention were given to it, any one with a good habit of "putting this and that together," or as is popularly said of "generalizing," we see no reason why might not unveil the mystery. Last year we received some very interesting galls, like small apples on the grape vine, now we see by the *Austin* (Texas) *Republican*, that some resembling acorns exist on the grapes of that district.

White Flowers for Winter Cutting.—*B. Chicayo, Ill.*, "Can you oblige a subscriber to the *Monthly*, by a list of the best six white flowers adapted to winter cutting?"

Stevia serrata, Double White Camellia, Calla Ethiopica, Lilium candidium, Deutzia gracilis and Double White Chinese Primrose, will make a good variety of the most varied forms. We do not know, but there might be found six others as good as them. White Azaleas, Double White English Primrose, White Roses, White Abutilon, White Ageratum, Perennial Candytuft, Cyclamen Persicum album, White Cinerarias, Gardenia florida, Fabiana imbricata, Daphnes, White Jasmines, White Zonale Geraniums, White Verbenas and White Violets are all good things to cut from.

Newspapers.—We are frequently indebted to friends who send us marked newspapers or magazines, with matters interesting to horticulturists, for which we are always thankful.

Rhododendrons.—*M. B., Baltimore, Md.*, says: "In travelling through a part of North Carolina this year, I saw large tracts of the Rhododendron maximum, our native Mountain Laurel, and could not but wish it could be had in our nurseries to cultivate. On Roan mountain particularly they were of all colors, from almost white to deep rose and crimson; on some of the high peaks they were in bloom when not more than a foot high."

[We suspect the species seen by our correspondent was the *R. Catawbiense*, which is the southern form; R. maximum, is a northern kind, and has flowers from white to purple, and not of a crimson tint, as here described. They are found cultivated in the leading nurseries of New York, Boston, Philadelphia and we believe Baltimore, though we do not see them in any list of those nurseries which we have on hand.

There is another very pretty southern Rhododendron, *R. punctatum*, which we believe is not in cultivation, but which it would be well worth while to introduce to notice.

There was a time when it was supposed Rhododendrons could not be cultivated in America, but that has been found an error. The mistake was in growing them in the shade. With a *soil made cool* by a little art, they do best in the sun, and are now coming into general cultivation.

Acer colchicum rubrum.—*G. S. & W., Geneva, N. Y.*—Your leaf is *Acer colchicum rubrum*. It is singular that this species has been overlooked in Botanical works. Although described first in Loudon's *Gardener's Magazine* (2nd Vol. we believe), he has forgotten to include it in his "aboretum." It was first discovered in the Crimea many years ago by Mr. Booth, of Hamburg. Some botanists have recently supposed it to be synonymous with *A. Lobelia*; but we have investigated this recently and find it quite another thing. It is a distinct and beautiful species.

Grape culture and Wine making.—*B. R, Boyden, N. C.*—"What is the best work on Wine making and Grape culture?" [Phins work we consider the most complete. Hussmann's covers a good deal of ground. Probably a monthly magazine, *The Grape Culturist*, published by Studley & Co., St. Louis, Mo., would furnish you with as many good ideas as any book you could buy.]

White Fox Grapes.—A friend hands us some very large specimens from Lycoming Co., Pa., the enormous size of which may be appreciated by the fact of it taking only 64 berries to make 1lb. They are rather flatter than most fox grapes. Botanists frequently "run against" this variety, and we are rather surprised that some one fond of dividing, has not made it a *species*. It is better worth that distiuction than many which have been named.

Russian Apple.—*M. B., Baltimore, Md.*—"While writing may I not inquire whether there are such things as "Russian Apples" grown in the North? A friend speaks highly of them."

[We do not know what are "Russian apples," as distinct from other apples. The Siberian

Crabs are "Russian apples," and there are some very good varieties of apple that are of Russian origin. The Alexander, Red Astrachan, and Tetoffsky are instances. Perhaps these last named are meant.]

Venus Fly-trap.—*M. B., Baltimore, Md.*—We believe it has not been disputed by any one whose reputation as a good scientific observer is acknowledged, that the object of the Dionæa in closing in on the hapless insect, is *to eat it.* See article by Mr. Canby in our last year's volume.

The Horticultural Arrangements.—We have been frequently asked who got up the late beautiful exhibition in Philadelphia. We may say that Mr. Robert Scott, of the Catharine Street Nurseries, was the Chairman of the Working Committee, and gave the the whole his constant personal attention. Too much praise cannot be given him for his great success. The balance of the work was chiefly undertaken by Messrs. J. E. Mitchell, J. S. Houghton, Thos. P. James, C. P. Hayes, Wm. Hacker, Dr. Corbin and Secretary Harrison, who worked night and day at their voluntary posts. If any other society can show such devoted servants they may well be proud of them.

Books.—*J. W. McI., St. Louis, Mo.*, writes: "I have a little 9x9 cold pit or one horse greenhouse, mostly under ground, 2 acres of lawn in front and around the house, bay window on the south 6x9, wardian case, hanging baskets, etc. Have no hired gardener, so you see I want to know, as we say West, a heap. What is the best work? What work is there published that will give me the name of any plant or flower, the treatment it requires, mode of propagation, etc., in detail; say very much as Adam Graham gives on page 234, Vol 1860 under article "Greenhouse plants," in your magazine. To illustrate, last night my wife hunted over Henderson and an old edition of Breck, and perhaps some others, to know how she should treat her Calla. She found little or nothing to the point. I got said volume of your magazine, and turned to said article, and it told all that was necessary to know about its treatment nearly, but it did not tell how to propagate, how hardy they were, etc. Now gardeners, or rather florists, must have some other sources than tradition, and from the amount of books I have yet seen, I think it is not in them that they get many details necessary to know how to make it profitable to them and pleasant to an amateur. I have by the way, Buist on Flowers, Parsons on the Rose, Breck's Book of Flowers, and Bridgeman on Flowers, but I have no idea I will find what I want. Yesterday my wife wanted instructions about ferns, and could find nothing. I see in my English catalogue, Loudon's books, perhaps they are what I want."

[There is no work that will answer every want. Indeed it is one of the missions of the *Gardener's Monthly* to supply what such works lack. We are always glad to get the inquiries, because in answering them we help hundreds of others, who are too bashful to inquire of an Editor on their own account. In addition to the works named, Mr. *Loudon's Gardening for Ladies* will be found useful, as well as Rand's *Parlor Gardening.* Let us know what is lacking about ferns. As to the Calla, it is a native of the lower Nile regions, and will not endure frost. It does not require great heat however, as it will live out all winter under water in ponds, where the water is deep enough for the frost not to reach it. Many persons use the plant for aquariums, but an idea prevails that it is not healthy for fish in such water. Its great value is for winter blooming in windows and greenhouses during winter. It does best in very rich soil, in a tolerably large pot—about ten inches—and must have abundance of water while growing. It likes light, but not the brightest light. About June the leaves die away, and the roots may be suffered to get nearly dry. Most people set them away under the shade of a tree or fence, letting them take their chances till September, when they commence to make a new growth. The offsets by which they are propagated are then taken off, and set singly in three or four inch pots,—the large bulbs in six inches, given encouragement to grow, and taken into the house before the frosts come. After the pot is full of roots it is shifted into ten inch as before described.

Here in the East it is a great feat to get them in bloom by Christmas; and many vie with their neighbors to accomplish it. To do this, they start them to growing as soon as possible in fall, giving them all the light possible. Most people do not get them out till near Easter, and they go usually by the name of "Easter Lily." It is a growing custom with the Roman Catholic, Episcopalian and Unitarian bodies to decorate their churches at Easter with Callas]

California Fruit.—Dr. Streuzel, of Martinez, California, through Col. Warren, of the *California Farmer*, contributed a beautiful collection of California fruit, to the late Philadelphia Festival. Wells, Fargo & Co. handsomely forwarding the whole, free of cost, for the occasion. It did not arrive till the "day after the Fair," but was placed free on exhibition by the Horticultural Society. It was visited by a large number of citizens, and very much admired. The plums and pears came in admirable condition, but the grapes not quite so good, but still better than one might expect. The following is the measure of some of the pears in circumference, Flemish Beauty, 13 inches; Beurre Diel, 11½; Dix, 10; E. Beurre, 12; Beurre d'Aremberg, 12; Winter Nelis, 9½; Seckel, 8; Vicar of Winkfield, 13½ by 11 long; Glout Morceau, 10½; Duchesse d'Angouleme, 12½; Calabasse Bosc, 11; "Black Winchester," 13½; Swann's Orange, 12¼; Steven's Genesee, 11½. The quinces were about 14 inches. After the exhibition they were donated by the Society, to the City of Boston, for their exhibition on the 21st inst.

Early Rose Potatoes in England.—It has long been known to Americans, that European varieties of Potatoes are worthless when introduced into America, and American ones of no account when grown in Europe. Our English friends seem totally ignorant of this fact, as there are loud complaints of the Early Rose being a swindle. It does not prove as good there in some cases as their poorest varieties.

The Agricultural Department and the Ramie.—Paragraphs for nearly a year past have been going through the newspaper press to the effect that Mr Capron had condemned the Ramie fibre. No contradiction was given to this and we assumed it was so. Then we read ourselves in the monthly reports of the department, that the department discouraged its cultivation, because on the authority of a letter from Liverpool "there was no market for it." The impression on our mind after reading the article was, that the reason there was no market was because it was worthless.

We learn, however, that this was not Mr. Capron's intention. He does believe in its value. His object was to caution planters not to go largely into its culture until there was more demand for its fibre, than what the statistics of the department showed was the case.

We are very glad to be able to make this correction, as Mr. Capron's administration of his department has been so satisfactory amid the many difficulties surrounding him, that our journal would be the last to embarrass it by any misunderstanding of this kind.

Hot Water Boilers.—There has not been much improvement in these of late years. In England a new patent has been announced as "Green's tubular boiler."

They are square. The boiler consists of tubes, which with the fire place, are all enclosed in a square iron plate; the whole moveable as a common kitchen stove. They are warranted to last ten years, without getting out of order. The following are the advantages the patentee claims for it:

1st. They require no setting in brick work.

2nd. They are complete in themselves, having perfect means of regulation.

3rd. They take up little room, and can be put in places inaccessible to other Boilers.

4th. They are economisers in fuel, owing to the great amount of heating surface upon which the fire acts in a direct manner, and the consumption of smoke.

5th. The fire can be made to last from 12 to 24 hours without attention

6th. Any number of Flows and Returns can be annexed to the Boilers by means of T pipes.

7th. By means of mud doors, they can be readily cleaned out when required.

8th. The Chimney is made of cast iron, which can either be taken through a roof or turned into a flue, to meet the convenience of the situation that it may be fixed in.

Pear Culture.—*Hearth and Home*, says, "A certain Editor has been advocating for several years the abandonment of the practice of cultivating orchards after they have reached a bearing size." Further, it adds that Mr. Patrick Quinn, "has proved the falsity of this non-cultivating theory," at a loss of "several hundreds of dollars."

Of course people will sometimes fail under any "theory." First because they do not understand the theory, and secondly when they do, success does not depend on any one theory. We never knew any system of fruit culture or any other culture that was so perfect that any and every body could every year produce unfailing crops. The point at issue is not this, but whether *any system that preserves and encourages roots at the surface, is better than any system which does*

not? Will "certain Editors" (there seems to be great delicacy about mentioning names) meet this point fairly? In the case of Mr. Quinn, the "falsity" lies on the shoulders of "certain Editors" of *Hearth and Home*, for Mr. Quinn's own book shows that the paragraph we quote places him in a "false position." In this book Mr. Q. states frankly that under *his system* nearly every variety of pear has ceased to be profitable, and of those which are now so, he does not know how long they will so continue. And he further says, that his best success has been with some which he has *recently* tried on *our system* of letting the surface roots alone the whole season. Will the *Hearth and Home* do Mr. Quinn the justice to place him right on the record?

BOOKS, CATALOGUES, &C.

PEAR GROWING FOR PROFIT.—By P. T. Quinn.

Few persons are better known in Pomological circles than Mr. Patrick Quinn. Taken at a very early age into the family of the late Mr. Mapes, to whom he became endeared by a naturally quick disposition, he has been brought up in a good philosophic school; while the opportunities he has had of putting into practice the lessons of his early education peculiarly fit him for a writer of a practical work like this.

We shall not stop to criticize errors of grammar or faults of style These are not so much noticed in a work intended merely "to furnish practical information," as they would be in one of more pretension; although we think that more attention to this in the present work and similar ones recently issued would, at least, not detract from their value. The chief points which concern us, are the opinions of the author and the rules he lays down for the guidance of the Pear Grower.

Mr. Q. thinks that there has been much more money lost than made in Pear culture. His own early experience was unsatisfactory, and he "hopes to prevent some from repeating the mistake of which myself [I] and many others have tasted the bitter fruit." What he thinks these mistakes are, he seems to sum up in the following paragraph:

> Under the excitement of "pear fever," many persons planted large fields without any preparation of the soil. Others selected long lists of varieties that were unsuited to their soil and climate. Others, again, believed that a fruit tree once in place could take care of itself without further expense or trouble to its owner.

Of varieties, he thinks, about six kinds are enough for any one to grow who markets for profit, and names Bartlett, Duchesse d'Angouleme, Seckel and Vicar of Winkfield as "favorably known in every locality." Horticultural Societies do wrong in offering premiums for the "best collection of varieties." He prefers a north-eastern aspect on dry grounds; this retards ripening. Pears are usually not profitable till October. They should succeed the peach. He believes in shelter from wind. Pear hedges will do this, besides yield some fruit. Retentive soils should be under drained, even at the present cost of labor and materials; and all soils but light sandy, subsoiled eighteen inches deep, and plenty of good food is necessary to success. Standard pyramids should be set 12 feet by 16; dwarf, 10 by 10; every tenth space 15 feet, to allow a cart-way through. Root crops may be sown between, but not strawberries or grain crops. Currants midway in the rows do no harm and are profitable, will yield $117 per acre net. Discontinue everything but pears at the end of 5 or 6 years, after which keep clean by the cultivator or horse hoe, the sixth or seventh year some returns may be expected.

Only the Duchesse d'Angouleme succeeds with him on the Quince stock. One year trees are preferred for planting. Pear growers should either try a large list of varieties for themselves and select, or inquire of those living near who have tried; no other rule can be given. At Newark, N. J., Bartlett, Doyenne Boussock, Lawrence, Vicar of Winkfield, Beurre Clairgean, Seckel, Beurre d'Anjou, are his choice. He gives the following as

AMATEUR'S LIST.

Summer Varieties.—Bloodgood, Manning's Elizabeth, Dearborn's Seedlings, Doyenne d'Ete, and Rostiezer.

Fall Varieties—Andrews, Bartlett, Belle Lucrative, Doyenne Boussock, Duchesse d'Angouleme, Beurre Bose, Seckel and Sheldon.

Winter Varieties—Beurre d'Anjou, Dana's Hovey, Lawrence, Winter Nelis, and Vicar of Winkfield.

From this list of twenty approved varieties, the amateur may select enough to give him fine pears for table use from July until March.

He prefers the pyramidal or conical system of pruning; to produce this, full instructions are given. He prunes usually in spring. If the trees grow very strong, prunes in summer, but this requires great care and judgment. Unfermented manures are death to pear trees. A compost of muck, salt and lime is good. Full directions are given for gathering, preserving and marketing fruit.

Discussing the diseases of pear culture, he refers to girdling by field mice, for which grafting by scions is recommended to save the trees,—the bark must be kept clean by potash wash; in old trees the bark scraped. The fire blight, he thinks, "partial to varieties." No preventive is named, but cutting away the diseased part recommended.

These are the leading points of Mr. Quinn's essay, as we gather from 126 pages of proof sheets, sent us by the publisher, although a letter informs us a "a very few pages are wanting." The matters we have not referred to, are such as would be recommended by any good cultivator for any tree, the pear included. We find nothing to help us against the great foe to "Pear growing for profit," the leaf blight, pollen weakness, canker, or the many great troubles which really stand in our way,—no reasons are given why every variety but one has gradually given out with him, on the quince; or his profits reduced to a dependence on six standard kinds. Many other varieties *have been* profitable with him, but are not now, and, speaking of the Duchesse d'Angouleme, he is "not sure how long that will remain so," and we suppose of the others he names. It is clear, therefore, that this throwing of failures on to the "varieties" is a mere stalking horse. The real cause lies much deeper. We think Mr. Quinn approaches very near one great truth in the final solution of this great question, in the following extract:

> "I find in our orchard, that when the ground around the trees has been mulched, not only the growth of wood is more uniform but the fruit is larger. This, too, on pear trees otherwise receiving the same treatment. I was so convinced of this fact, that for the past four years, one part of the pear orchard has been kept covered with hay the whole year, except when removed to apply the spring dressing of manure.
>
> We always procure an abundance of "salt grass" from the low meadows lying within one mile of our place. This we find an excellent substance for mulching the pear orchard. During the winter the hay is carted home and left in heaps in convenient places until summer, when it is spread over the ground, about half an inch in thickness. This serves a three-fold purpose; it prevents the weeds from growing, and, as stated before, keeps the surface moist. Another advantage is, the pears that drop or are blown off by heavy winds in the fall, are not bruised and rendered unsalable, as they would be, falling on ground without a mulch, especially if the land is stony. It is a wise course to follow under all circumstances, when material can be obtained. It will require about four or five tons to the acre the first year; each succeeding year, half that quantity will be enough, as from one-third to one-half of the old mulch can be again used The amount saved in the labor of keeping the ground clean, will, in many cases, pay for the mulching material after the first year's outlay, and a much less quantity of manure will be necessary to keep the trees in a healthy condition."

We congratulate Mr. Quinn on this great advance, and have no doubt in any future edition of *Pear growing for Profit*, he will find in this extract the foundation stone of a strong work in both theory and practice.

JOHN FEAST & SONS, BALTIMORE, MD.—catalogue of Greenhouse plants. We like to see the culture of flowers encouraged. Fruit growing has so many votaries that it seems to cast the realm of Flora into the shade. This is an excellent list.

ILLUSTRATED CATALOGUE OF GRAPE VINES.—Isidore Bush & Sons, Bushberg, Mo. This is a beautiful pamphlet catalogue, with full descriptions of most kinds of grapes known in the country. It is filled full of information not usually found in catalogues; indeed though we suppose intended for gratuitous circulation, is as full of good matter as if it were made into a book and sold for a dollar a volume.

EARTH CLOSETS. By Geo A. Waring.

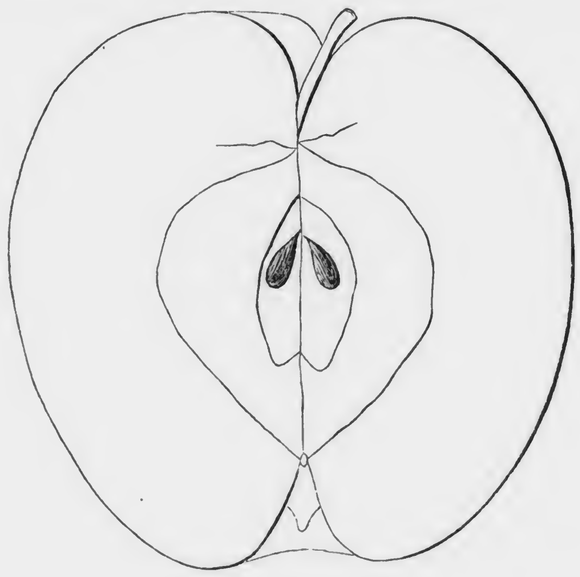
We have before us a pamphlet on this subject, which is now attracting much and deserved attention. The nature of these affairs will not be entirely new to our readers who are familiar through the *Monthly*, with the excellent absorbent powers of clay for ammonia. The following account will, however, have some additional interest:

"A stockcompany has been formed at Hartford, Connecticut, for manufacturing these closets or commodes. The earth closet resembles a high backed chair or box, and takes the place of the common water closet, but at greatly reduced cost, and free from the inconvenience of freezing in winter, as there are no water pipes. Neither is it in any way offensive in warm weather. After being used, the pulling of the handle discharges into the closet a pint of dry earth, entirely preventing any effluvium. The hopper attached to the back part of the closet, contains earth for twenty-five times.—Then the scuttle below, containing the dirt, may be taken away, or it may be repeatedly used. Several convenient kinds of dirt may be used, such as peat, coal ashes, clay loam, but neither sand nor wood ashes would be desirable. Whatever material is used should be perfectly dry, as well as thoroughly pulverized."

NEW AND RARE FRUITS.

APPLE KANSAS QUEEN.—*Dr. Stayman, of Leavenworth, Kansas*, writes: "I enclose a drawing and description of the Kansas Queen Apple, which I presume you will see at the Am. Pomological Society, at Philadelphia. This apple I believe possesses considerable character, and I think worthy to be extensively tried, as it appears to possess the same characteristics as the N. Y. Pippin.

Kansas Queen.—Fruit medium to large, roundish, conical, slightly ribbed toward the eye; color clear lively crimson, dark red in the sun and a bright pink in the shade, glossy as if varnished, dotted all over with small grey dots;



[KANSAS QUEEN APPLE.]

stems short and slender, but sometimes long; cavity very narrow and deep with a lip or protuberance, which is very prominent, causing the stem to be nearly obscured on the opposite side; eye medium, nearly closed; basins narrow and shallow, furrowed and ribbed; flesh clear white, firm, juicy, and crisp, with a brisk sub acid flavor, good; core regular, large and open seeds, long pointed and full, dark brown; season, August and September; use, kitchen and market. Tree vigorous and hardy, forming a handsome open head, setting fruit evenly all over the tree; leaves and bark dark.

A seedling raised by B Atkinson, of this place, from the seed of the Ben. Davis (N. Y. Pippin) planted 1858, bore fruit last year, while nearly every variety failed; this year it is full, and a more beautiful sight could not be witnessed, such a handsome bright red apple of even size with no defective ones is seldom seen. From present prospects it promises a better crop next season. The tree is so identical in all its habits with the Ben Davis which is a sufficient recommendation to all who know that variety, without any additional comments. I would simply say that there is no apple in its season possessing the same beauty, neither is there one which would command the same price in market."

[We were much pleased with this apple. It is a showy fruit and will take rank in popular estimation with the Williams, about Boston; and Cornell's Fancy, in Pennsylvania, to which class of handsome fruits it belongs.—ED.]

FALLWICKE GRAPE.—A report of the Tennessee Horticultural Society says:

"Among the many new things on exhibition, nothing deserves or receives more notice than the new seedling grape, Fallwicke, originated by Joseph Fallwicke, of Wartburg, Morgan Co., Tennessee. Its size, flavor and wine properties, render it a very valuable acquisition. Mr. Fallwicke has fruited it four years, and enters two bottles of wine from it that were pronounced superb by good judges.

The committee say of the wine made from it, for which a premium was awarded:

This premium is awarded upon a wine made last season by the exhibitor, Mr Fallwicke from a new seedling, of large bunch, and the berries also large and translucent, of a considerable foreign character, grown at Wartzburg, Morgan Co., in this State. Having examined specimens of the fruit, not fully ripe, presented this season, the committee consider it proper earnestly to encourage its cultivation for wine purposes."

MOUNT VERNON PEAR.—This pear raised by Hon. Saml. Walker and named and described by him under this name in our first volume, just before his death, we are glad to see is about to be distributed by Mr. W. S. Little. We stated at that time that we regarded it as one of the very best pears; and now we are glad to see that this opinion is sustained by Messrs. Wilder, Hooker and others, in testimonials now before us.

GRIMES' GOLDEN APPLE.—Mr. Marshall hands us a long list of testimonials from the best authorities in praise of this apple. We have already given our favorable opinion of this fruit, and we note the names of Warder, Wilder, Bateham, Kirtland and others of equal renown in the memorandum sent, which is high praise.

MIAMI BLACK CAP RASPBERRY.—Mr. Chas. Downing says in *Hearth and Home*, that there is a raspberry in cultivation, which is being grown—all one thing—under the following names: "McCormick, Miami, Large Miami, Improved Miami, Collinsville Miami, Superior Miami and Mammoth Cluster."

He thinks McCormick should be the name adopted. But there is another Miami which has been grown in Ohio and other localities, the fruit of which is not quite as large nor as black but of a more brownish or reddish black, not quite as sweet, but vigorous and nearly as productive, and ripens about the same time or a little earlier."

By what name had this better be distinguished?

THE TRIUMPH OF AMERICA.—A variety we discovered in the grounds of Henry A. Dreer, Philadelphia, Pa. Berries of largest size, exceedingly productive, and good quality. In comparison with the Triomphe de Gand, it is more vigorous, more productive, adapted to light soils, larger size, and flavor quite distinct, more sweet. We are not fully satisfied yet as to its being a distinct variety, not having learned its history. It will probably be more fully decided another season.—*Horticulturist.*

GRAPE, WHITE LADY DOWNE'S, was raised by Mr. Thomson, of Dalkieth, from the Black Lady Downe's. The vine is of the same vigorous habit of growth as the parent, equally fruitful, sets more freely, requires less heat, and is not as liable to scald as the black variety; keeps as long, if not longer; and has fully as good a flavor.

THE TETOFSKY APPLE.—The new Russian apple, the "Tetofsky" is likely to be a great boon to the fruit growers of Minnesota, Wisconson, and Northern Iowa. A correspondent of the *Iowa Homestead* says: "It is a great prize to us of the far Northwest. It is very early (a trifle earlier than Red Astrachan) good size, always fair; a very young bearer, and enormously productive. It is also at the very head of the list for hardiness, ranking with the Siberian crabs and Duchess of Oldenburg. In one respect, I consider myself very fortunate in having this comparatively new and rare sort in bearing in a situation so exposed as to thoroughly test its many good qualities."

In his "American Pomology," Dr. Warder, says of this apple:

"This little foreigner was brought from Russia, and seems as well adapted to our climate and tastes as are its companions from the same region.

Tree vigorous, hardy, productive, upright; leaves broad, pale or light green.

Fruit small to medium, round, flattened somewhat conic, angular, surface smooth, yellow, striped, splashed carmine, white bloom. Basin

shallow, folded ; eye large closed. Cavity wide, wavy, or deep, acute, stem short, yellow.

Core large, closed clasping ; seeds numerous, plump, brown Flesh yellowish white, breaking, fine grained, juicy ; flavor acid ; quality, good ; use, market or kitchen ; season June, July—before Early Harvest.—*Western Rural.*

FALL BEARING RASPBERRY.—Mr. Israel Lamborn, West Bradford, Pa., found a raspberry wild last fall with fruit on ; he transplanted it to his garden and it still retains the characteristics. - *Village Record.*

MICHIGAN SEEDLING STRAWBERRY.—While on Mr. Adair's grounds, at Detroit last summer, he pointed out this variety in his collection. It was not in condition for us to offer any opinion, but Mr. Adair spoke very highly of it. It was introduced in 1868. An exchange says of it :

"Raised by B Hathaway, of Little Prairie Ronde, Mich. ; a week to ten days later than the Wilson, said to keep better, more even size, and finer fruit. Represented to be unequalled for hardiness, vigor, productiveness, and long keeping qu dities ; average product of well-established beds, four quarts to three hills."

NEW AND RARE PLANTS.

The following new Plants are noticed in the English journals :

AMPELOPSIS JAPONICA.—A new hardy Virginian Creeper, sent from Japan by Mr. J G. Veitch.

It is remarkable for its compact shrubby habit and for the great beauty of its foliage during the Autumn months, the colors surpassing those of the popular Virginian Creeper, A. hederacea

After being exhibited before the Floral Committee of the Royal Horticultural Society in October, 1868, and awarded a first-class Certificate, it is thus described by Mr. Moore :—

"A bold habited and remarkably beautiful hardy deciduous climbing shrub, with broad ovate oblong leaves, which in Autumn asssume a rich orange-red tint, and are extremely beautiful. It was much admired."

BEGONIA ROSÆFLORA.—This is one of the many beautiful Begonias discovered by the late Mr. Pearce, in the Andes of Peru, coming from an elevation of 12,000 feet. It is admirably suited for cool greenhouses, and is very nearly if not quite hardy, and may be safely planted in sheltered situations.

It is a stemless species, with orbicular reniform bullate radical leaves, and scapes supporting from three to five flowers of a bright rosy color as large as those of Begonia Veitchii. It is figured in the "Botanical Magazine" for December, 1867.

CROTON (CODIÆUM) MAXIMUM.—This magnificent Croton is probably the finest variegated plant of the season, and certainly one of the most striking ever offered. It far surpasses all others hitherto known, Mr. J. G. Veitch discovered it during his trip to the South Seas.

It is one of the largest yellow leaved varieties, of a strong robust habit, and admirably suited for exhibition or general decorative purposes.—The leaves are oblong lanceolate acute, from 12 to 14 inches in length, by 3 to 4 in width, of a rich golden color, marked on each side the midrib with dark olive-green bands of irregular form.

It is one of the showiest stove variegated shrubs.

Figured in the "Floral Magazine."

DRACÆNA MACLEAYI.—Brought home by Mr. J. G. Veitch from the South Sea Islands.

It is exceedingly robust and compact, with leaves from 15 to 18 inches long, by 3 to 4 in width, of a dark bronzy brown, with a decided gloss or metallic tint over the whole surface.

The peculiar habit and color of foliage of this fine species renders it perfectly distinct from any other in cultivation.

DRACÆNA NIGRO RUBRA.—It is of bold erect growth, with leaves from 16 to 20 inches in length, of a dark brown, with a bright rosy-crimson centre, the young foliage being, as a rule, entirely of this latter showy color.

In habit it is very similar to Dracæna terminalis, but its striking shades of crimson render it quite distinct from that of any other species.

BANQUET AT THE PENNSYLVANIA HORTICULTURAL SOCIETY'S HALL.

A great many of the members of the American Pomological Society, not being aware that the Horticulturists of Philadelphia intended to close the Proceedings with some evidences of their hospitality, and of their appreciation of the choice of their city for the honor of the meeting, had made arrangements to leave the city on Friday afternoon, before getting to Philadelphia. Many asked us to give in the *Monthly* some account of the proceedings, if likely to be of general horticultural interest

We believe every thing passed of pleasantly. Some 800 participated in the pleasure of the evening. In the morning the convention was received formally as the guests of the city in Independence Hall, by the Mayor in person. They were introduced by Dr. J. S. Houghton, in the following pretty speech :

SIR : It is my pleasing duty, as a member of the Pennsylvania Horticultural Society, to present to the Mayor of Philadelphia, the officers and members of the American Pomological Society, now holding a session in this city.

I present to you, sir, a body of cultivators of the soil, who represent a vast industrial interest, extending over the whole continent, and which counts its annual products in *plants* and *trees*, by millions of dollars.

I present a body of men whose annual products, in the shape of *fruit*, carry health and happiness to millions of our people.

I present to you an assemblage of men whose labors in the fields of natural science have not only done them honor in America, but whose names are honored and familiar in all parts of Europe.

I present to you, sir, the fruit-cultivators of the New England States, whose heads are now silvered with age, and with them I present the pioneers of the ever advancing West, who have just planted their vines and fruit trees to the outer verge of civilization—even to the ice-bound shores of Alaska.

I present to you Wilder and Hovey, of Boston; Downing and Barry, of New York ; Warder, of Ohio ; Hussmann, of Missouri ; Berckmans, of Georgia—names as familiar and honored in the profession of fruit-culture as Bartram and Peters, and Brincklé and Cope, of Philadelphia.

In imagination, here in Independence Hall, I present the Genius of *Peace* and *Plenty* to the *Genius* of *American Liberty*. I present Bunker Hill to the cradle of the American Union. I present the plains of Carolinian Sumpter to the battle-field of Germantown. I present the representatives of Massachusetts Bay and Providence Plantations, and the pioneers of Kansas and California to one of the parent States. I present the young American ploughboys of the West to William Penn. And here, in this sacred spot, hallowed by our beloved Washington, who now stands in speaking marble in front of the entrance, I may, with these men and these surroundings before me, again, in imagination, ring the old bell of Liberty, and hope not only for liberty, but for peace and plenty, and especially for an abundance of generous fruits for all mankind within our borders

Sir, permit me to introduce these men and these sentiments to the worthy representative of the Keystone State of the American Union—to the representative of a city which admits of *no superior* on the continent in the extent of her industrial interests, in the genial character of her position, in the number of her happy homes, in the intelligence and virtue of her people, and in their patriotic devotion to the best interests of the Union.

Sir, I introduce the Hon. Marshall P. Wilder, President of the American Pomological Society, and his associates, to Hon. Danl. M. Fox, Mayor of Philadelphia, and I am sure the interests of our pomologists are safe in such hands as these.

The reply of the Mayor and of Mr. Wilder were both equally happy.

After the edibles had vanished and the music ceased to play, speech making was in order.

The first sentiment proposed was

Hon. Marshall P. Wilder, President of the American Pomological Society, the Peabody of American Horticulture.—He has devoted not only his *fortune* but his *life* to the interests of Pomology, and, like his noble portotype, he lives to witness the gratitude of a generous nation.

Mr. Wilder responded as follows :

MR. PRESIDENT : I am deeply sensible of the honored conferred on me by associating my name with our nation's benefactor, and I tender to you, ladies and gentlemen, my profound obligations for the kind manner in which you have received that sentiment. I am most happy to be here this evening, and to enjoy the privileges and pleasures of this occasion. For more than thirty years it has been my good fortune to fraternize with the leading agriculturists and horticulturists of Pennsylvania, and whatever want of fitness or ability there may have been in me, I have always been received with the utmost courtesy and kindness.

It has also been my privilege to welcome to my own State delegations from Pennsylvania, and to extend to them the hand of welcome on the part of our old Commonwealth. More than twenty years ago the Pennsylvania Horticultu ral Society sent a delegation to the Massachusetts Horticultural Society, headed by your inimitable orator, Morton McMichael, [applause,] and there in old Faneuil Hall, in that cradle of liberty, renowned alike with your Independence Hall, there in the presence of Webster, Quincy, Winthrop, Dearborn, Downing, Skinner, and others of fair fame, he delivered one of the most eloquent speeches with which that time-honored hall ever resounded. [Applause.]

And again, ten years afterwards, the Philadelphia Society for the Promotion of Agriculture sent another delegation, headed by my good friend General Patterson [applause,] and there again Mr. McMichael, in the presence of the vast throng that attended the exhibition of the United States Agricultural Society, again surrounded by the Governors of the New England States, by Henry Winthrop and a host of other worthies, there, with his inimitable native eloquence, he held the vast throng in breathless admiration.

It has been my privilege also, to receive the courtesies of the State of Pennsylvania. In the next year the good citizens of Philadelphia made arrangements for the exhibition of the United States Agricultural Society at West Philadelphia, where sixty thousand persons on one day entered the grounds; and, let it never be forgotten, the last family representative of the memorable Washington, George Washington Parke Custis, delivered his valedictory to the American people. [Applause.] And, ladies and gentlemen, I recall to mind the sad and melancholy duty demanded by this Society; to perform a service, and deliver the eulogy on my bosom friend, Andrew Jackson Downing. [Applause.]

And here let it also be told that in this very city the plan of the National Pomological Society, which is now in its twenty-first year, and for the third time meets under your generous hospitalities—let it also be remembered, to the honor of the late Dr. Brinckle and Andrew Jackson Downing, that the plan of that Society was also projected in this city [applause,] and thus, ladies and gentlemen, Pennsylvania and Massachusetts have been bound together as twin sisters.

The first agricultural society ever established in our country was formed in this city of Philadelphia, in 1785. Imitating that good example (and I beg to say that our own Massachusetts Timothy Pickering was its Secretary) Massachusetts formed an agricultural society for the promotion of agriculture, and, as Cowper says. "He that loves a garden loves a greenhouse too," so this instinct for rural culture finally culminated in the establishment of the first horticultural society on this continent

Here in this city of Philadelphia grew up the Pennsylvania Horticultural Society, and imitating that good example again, Massachusetts followed it, and in two years afterwards she formed her Horticultural Society, in the year 1829, and thus Pennsylvania and Massachusetts, Philadelphia and Boston, have stood together, shoulder to shoulder, for the promotion of the agriculture and horticulture of our country. [Applause.] And more than that, let it still be remembered that when we went up to Washington to form the United States Agricultural Society, the Phildelphia Society for the Promotion of Agriculture stood close to us, and during its whole existence was one of the main props and stays. But I must not occupy your time much longer.

Mr. President, the present week has been a memorable one in the annals of pomology and horticulture. We have been welcomed by you in the most generous and hospitable manner; far beyond what we could have anticipated; and for these courtesies, sir, and for all the privileges, pleasure, and comforts we have enjoyed, I beg to tender to you, to the Society under your administration, and to the good people of Philadelphia, our most profound and grateful acknowledgments. [Applause.] And, sir, I cannot close without alluding to the influences which this week will excite throughout our country.

Here we have had delegates from the remotest sections, coming up to advance one of the most important branches of national wealth and happiness; and what has pleased me immensely, sir, has been the patronage you have received; and now this evening we have with us the ladies, those flowers of loveliness which add so much interest, beauty, and enchantment to the scene. [Applause.]

I am fond of rural life, sir, and think you will pardon me for one moment more. I love every thing that pertains to the elevation of the human race and establish the comfort and happiness of rural life. Why, sir, I love the vernal springs, which brings with it the fragrance of the garden and the orchard; I love the summer solstice, rich with the verdure of the forest and the field; I love the autumn, burnished with the golden

harvest of the year; but most of all I love to be associated with you who come up with us to elevate the human race, to ameliorate the condition of the human race, and to add to the comforts and blessings of rural life. But I will proceed no further, sir.

My sentiment on this occasion is the city of Philadelphia, the home of American agriculture, of American horticulture, of American Independence [applause;] a favored spot of earth where liberty first took root. Her fruits are known every where and surpass in value the garden palaces of antiquity. [Continued applause.]

The next was

"*California*—In fruit culture, a formidable rival of the Eastern States, but we welcome her splendid productions without fear, as she comes now, for the first time, into the Pomological family in such a grand *Pacific* way."

Responded to by C. M. Hovey, of Mass., as follows:

MR. PRESIDENT: Why you should have selected me to reply to your highly complimentary toast to our young sister State of California, I am at a loss to imagine. If it was because you supposed I was personally connected with her pomology or horticulture, it is an error. But if it was because I am familiar with the collection of fruit every where for more than a generation, or because as editor of a magazine devoted to the same, I have more than thirty years recorded its progress, I cannot ask to be excused from speaking for her.

It is but recently that we have had personal evidence of what has been doing in fruit-culture in that country. We have from time to time had what appeared extravagant accounts of the vegetation of the Pacific coast, of gigantic beets and mercer potatoes, of large peas and grapes, and occasionally a specimen of the Duchess or St. Germain has reached this distant coast to corroborate in part the published statements.

We were, however, prepared to believe a great deal. A country of such vast extent, and fanned by the genial breezes of the Pacific Ocean whose mountains are capped with everlasting snow, and whose valleys are clothed in perpetual verdure; whose fields are covered with countless flowers of every hue, and whose sierras are flanked with evergreen trees of gigantic size; whose birth dates back to a thousand years—a country teeming with so many of God's beauties, not to name her auriferous sands and mineral deposits; a country so rich in every thing that we could not dare doubt would some day give us personal evidence of the truth.

But, sir, the great iron band spanning a vast continent, which now binds the Atlantic to the Pacific, and through which is to flow that commerce which is to open to us the depth of her riches, has already revealed enough to convince us that California is, in reality, the paradise of fruit-growers—the country from which we are to gather the magnificent fruits hitherto denied us, to me, at least, sir, coming as I do from the hard and rocky shores of bleak New England—the country of granite and ice. On the tables of your Society, at the beautiful display just closed, we have had specimens of pears equal to if not surpassing any thing of Eastern growth.

Time would fail me, and I should tire you and this assembly, if I should attempt to paint in imagination what is in store for the enthusiastic cultivators of California. I deeply regret that we have not some one to represent her here this evening more able than myself to give you an authentic account of the fruit products of the Golden State.

Allow me, sir, in conclusion, to say to you and this company, that I welcome California in your behalf to the fraternity of fruit-growing States, and to assure her that the products of her vineyards and orchards will find a ready outlet in the populous cities of the East, and aid in supplying the millions with cheap and delicious fruits.

Then came "Western New York—A famous nursery not only of trees, but of men; good, vigorous stocks, successfully budded—material worthy of general cultivation."

Mr. Barry responded to this.

LADIES & GENTLEMEN: Western New York has been my home for thirty years. I love her. I am proud to hear her name so honorably mentioned on this great occasion, and I hope I will be pardoned for saying that the compliment is not undeserved.

Famous is she on record as a nursery of trees, There are to-day in Western New York not less than 20,000 acres of nursery, contain 4 or 500,000,000 of fruit and ornamental trees and plants to be used in the planting of orchards and gardens, and in beautifying the parks, pleasure-grounds, and homes of the American people, from one end to the other of our broad land. We have also nurseries of garden seeds and dealers in them, known everywhere for the extent of their operations.

You of Pennsylvania, who entertain us so hospitably and with so much elegance this evening,

are largely engaged in the same pursuit. You have long been engaged in it. The names of some of your excellent nurserymen and seedsmen are as familiar to the American people as household words. Who, from the Atlantic to the Pacific, have not heard of a Buist, Landreth, Meehan, &c ?

We hail you as brother co-laborers in a work which, though humble and by no means lucrative, is acknowledged to be eminently useful as well as humanizing and refining in its tendencies. Fifty years ago New York was a wilderness—now a *garden*.

As to being famous as a nursery of men, I think there is no exaggeration in that. Men should be adjudged by their deeds. The city of Rochester, which may be regarded as the central point of what is known as Western New York, was first settled, the first house built in it, between fifty and sixty years ago. Several of the very first settlers are still hale and hearty, yet we have a population of some 70,000 people. We have schools, colleges, churches, asylums, hospitals and all those institutions which indicate an advanced state of Christian civilization. This speaks well for our men.

Our flour-mills were long celebrated all over the world. Ten thousand barrels of flour and more per day have been made in them, and flour of unrivalled excellence. Monroe county, in which I reside, produced in 1850 1,500.000 bushels of the finest wheat, and was the banner wheat county of the Union at that time. Rochester has also attained some celebrity from being so long the headquarters of the Western Union Telegraph Company, with some forty millions of capital, the largest corporation of the kind in the world. Its palmiest days were those of Rochester.

Sometimes when I go abroad I am reminded that spirit-rapping originated in Rochester, but I am not certain on that point, and am willing to concede the honor to any claimant. We have enough to establish the reputation of our population for enterprise and intelligence without that.

I hope I shall not be accused of vanity when I say that our stock of men will compare favorably with that of any other locality, leaving out Philadelphia and Boston. We have given the country a President, and have several who think, and whose personal and political friends think are fit to be and ought to be presidents, and I think some of them will be one of these days. We have sent out from amongst us from time to time young men to push their fortunes in other States, and we have seen them becoming governors, senators, judges, &c. The present Governor of California was a Rochester boy. So I think it is no exaggeration, no mere complimen to say, that our stock of men is one worthy of general cultivation. They have shown their adaptation to every soil and circumstance.

Now, let me close my brief remarks by tendering my profound thanks—first for myself, and second for Western New York, as far as I may be permitted to represent her, to the Pennsylvania Horticultural Society, and to the citizens of Philadelphia, for the hospitable and elegant man ner in which they have received and entertained us. [Applause.]

Then was offered

Foreigners in America, and Americans abroad—Races of men, and varied nationalties, like many fruits, often do best when *double-worked* on varied stalks—and most men, in such cases, are governed by the laws, not only of *natural* but of *personal* selection.

To which Mr. Meehan was called on to respond, who said he was deeply sensible of the honor conferred on him, by his selection to respond to this sentiment; but not having the gift of extempore oratory, he felt than an error had been made by the selection of him in preference to others so much better able to do it justice than he could. The toast spoke of natural selections, but this certainly was a case of *unnatural* selection. He had almost forgotten that he had ever been a foreigner. Identified with America and with American interests in so many ways, it seemed as if no other country had any right to claim him,—and yet far away down in the vale of years there was often present to his memory a little spot of land which seemed like the prophet's cloud, no larger than a man's hand on the geographical firmanent; full to overflowing with the highest specimens of gardening the world ever saw, and in which the most famous gardeners the world ever knew, had a common origin with him. The world hardly knew what it owed to foreigners. The early disciples who spread Christianity through the earth, left home and friends and became foreigners; and the foreign gardener left the shores of Europe in like manner to preach the gospel of horticulture throughout the land, and especially in these United States. The great progress of horticulture in the United States, during the past fifty years, showed how

well they had done their missionary work; the great annual exhibition of the Pennsylvania Horticultural Society, chiefly sustained by foreign gardeners, also testified to the same facts; and even the present glorious and most successful meeting to which so many of these devoted Priests of Flora and Pomona had sacrificed some of their richest treasures, showed that the seeds they had sown had brought forth the noblest fruits.

Again, he regretted that some more able representative of his class had not responded, but would conclude by briefly thanking them in behalf if his brethren the foreign gardeners, by this kind remembrance of them on this memorable occasion.

The Experimental Garden at Washington City. When the Pennsylvania Horticultural Society sent their Saunders as superintendent, the Public Garden ceased to be an *experiment*, it became an assured *success*.

Mr. Saunders said:

LADIES AND GENTLEMEN, MEMBERS OF THE PENNSYLVANIA HORTICULTURAL SOCIETY: I appreciate most fully this kind recognition of my former connection with your society. To me its reminiscences have always been of the most pleasing kind, but they are now heightened and intensified by this evidence that the friendly associations formed are mutually reciprocated.

Your expression of assurance in the success of the Experimental Garden is very gratifying. Certainly, some progress has been made; and although our expectations have not been altogether realized, yet it must be considered that the garden is only a division of the Department of Agriculture, and being only an auxiliary, the greater portion of its labors and results are absorbed by, and cannot well be disconnected from the general efficiency of the department, of which it is a subordinate part.

Some of the more prominent of the aims and objects of the garden include those of testing varieties of fruits, a process, as you all are well aware, necessarily protracted and apparently slow; the introduction and extension of plants whose products are valuable either in the arts, in manufactures, or in medicines; the investigation of diseases, the extermination of injurious insects, and the very numerous operative details in practical horticulture, are a portion of its specific duties.

The range of these duties may be better understood by a brief recital of the principal co operative branches of the department.

The department is constantly collecting and depositing in its museum specimens of the various textile fibres used in manufactures, vegetable dyes, gums, sugars, and other products used in domestic arts, also those of value in medicine. The plants producing these are introduced and cultivated in the garden. Their numbers are here increased and distributed in the climates most suitable for their culture.

New seeds introduced by the department are mainly tested in the garden, and the knowledge thus gained serves as a guidance in their general distribution. The seed division of the department is one of great value, and its importance has never been justly appreciated. The necessity for an occasional change of seeds is an acknowledged fact in agriculture; but, although this is received as a principle, yet few persons are aware of the direct practical results of its application.

A new variety of oat was widely distributed during the last spring. From reports already received it is proved that the yield reaches an amount of from 65 to 75 bushels per acre, of a grain weighing from 40 to 45 pounds per bushel. Some years ago a variety of wheat was disseminated which has increased the crop from 4 to 10 bushels per acre wherever introduced. When it is considered that there are 20,000,000 of acres in wheat in the States, and that we have only to add one bushel to the acre to realize $20,000,000, the advantages of fresh introductions become apparent.

The statistical division is one of great special interest. Its claims for accuracy have been recognized by foreign governments, who are informing themselves of the method by which the department collects facts, and the modes of forming estimates. To accomplish this work the department is in communication with 1,300 agricultural and horticultural societies; a correspondence from 1,500 counties is received in monthly reports from 6,000 correspondents, in accordance with a uniform system of instruction. These correspondents are selected for this duty by the aid of local societies, members of Congress and the best judgment of local farmers.

Whatever value may be attached to this trained corps of reporters, it is evident that no commercial firm, no newspaper, no industrial association can have *better* facilities for collecting agricultural information of a similar widely-varied and important character.

The entomological, chemical, and meteorolo-

gical divisions are equally systematic in their operations, each in its own peculiar sphere constantly investigating and recording results all more or less directly valuable to the cultivator of the farm, orchard and garden.

A valuable herbarium has lately been added to the object library of the department. This is being increased, and will, in a few months, according to the pronounced opinion of a leading botanist, be one of the most complete in this country.

An aboretum is also being established. This collection of hardy trees and shrubs is arranged in strict accordance with a botanical system, and will ultimately form a source of instruction and information on the growth and use of trees, second to none in the world.

A system of exchanges with foreign countries is also being perfected. This already includes three hundred European industrial and scientific societies from which a vast amount of practical data is received—useful in the rural arts, and valuable to every branch of industry that converts raw products into beautiful fabrics and other useful manufactures. This also includes principals of educational institutions, curators of public museums, and superintendents of pub lic gardens, with all of whom exchanges are freely made

All this machinery has lately been readjusted and arranged by General Capron, Commissioner of Agriculture, and is now in complete working order, but like all other machinery, it will not long work smoothly without a proper lubricator. The best oil for this particular purpose is that extracted from a familiar plant, of which you have in this city a fine *specimen*—the *mint*. This product is always valuable, and the supply is frequently very limited and difficult to procure.

But you, gentlemen, and others who are members of similar associations can greatly assist in securing a lasting supply. You have only to see that those you select as your Representatives and legislators are men who thoroughly recognize that agriculture and her sister horticulture are the foremost of all arts, that the products of the soil form the basis of all wealth, that without them we would have no manufactures, nor commerce, nothing in fact to legislate with, nor anything worth legislating for. [Applause.]

The following sentiments were offered and happy responses made by the gentlemen named, and we regret that in the midst of so many duties, we could get no notes of their remarks.

New Hampshire.—Famous for her granite and ice, and still more famous for her men.

Responded to by Governor Smythe, of New Hampshire.

Our Watchful Warder of the Ohio Valley.—By the productions of his pen he has aided largely to develop and adorn the beauties of nature, and to increase our knowledge of the treasures of Pomona, while noxious bugs of all kinds find in him a determined and inveterate foe.

To which Dr. Warder responded in his usual happy vien.

General Capron, Commissioner of Agriculture, of Washington, D. C., was then introduced. He apologized for not making a speech, as he was in ill health. He was received with applause, and three cheers were heartily given for him.

The State of Kansas.—A national plant of vigorous growth, whose fruit is to-day attracting much attention. It should be placed foremost on the list of "specimens which promise well."

This toast was replied to by G. T. Anthony, of Kansas.

Mr. G. A. Allen, of Virginia, responded to the following:

The State of Virginia.—She has taken our first prize for superior mammoth pears. We consider *her a Pomological prize* worth having in our collection.

F R. Elliott, of Ohio, responded to the following: *The American Indians.*—If any addition to the Quaker Commissioners should be required we should send our modern Elliott (of Ohio) as an apostle to the red men, to teach them civilization and pomology.

The Horticultural Society of New York City.—Deeply do we regret the absence of the officers and members of that body on this memorable occasion; but we are consoled by the presence of a rural New Yorker, who can, no doubt, give us some idea of the state of agriculture in that village.

Mr. Bragdon replied so ably to this, that we understand the officers referred to will vote him a gold medal.

J. F. C. Hyde, of Massachusetts, responded in appropriate manner to the toast. *The Massachusetts Horticultural Society.*—It commenced its existence amid the delightful shades of Mount Auburn, but it seems blessed with a perennial life which has no present need of monumental marble.

In our next we will endeavor to give a digest of the more important matter brought before the convention.

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HINTS FOR NOVEMBER.

FLOWER GARDEN AND PLEASURE GROUND.

Every one who has dug up a potato knows that when the tuber has finished its growth, all between it and the parent stalk dies. If the potato were to remain undisturbed till spring, frost and other things of course uninjuring it, it would push up from the place where it stood, and a new set of potatoes push out, and the space between them and the original, get wider every year. So year after year there would be this continual progression,—a wandering away from the first centre, until in time the living plant might be a mile away from the original spot which gave it birth Something of this kind goes on in all herbaceous plants,—a part progresses, and a part dies every year. It is for want of this knowledge that so many friends lose these plants. Though all herbaceous plants move in some such manner, they do not all go directly under ground, but make bunchy stocks just above ground. In their native places of growth they manage to get covered with decaying leaves from woods or shifting sands on the plains, but in cultivation nothing of this kind can be naturally accomplished, and unless art comes to aid the plant they soon die away. An Auricula, a Primrose, or a Carnation is a good illustration of this. In the two former a new crown is formed on the top of the old one, and as the lower parts in time die away; unless new earth is drawn up, success with such flowers will not be great. The best plan is to take up and replant every few years, or cover the running parts above ground with earth, so that they may have a chance to get new roots from the advancing stocks. This is noticed here at this season to show that earth is the natural covering for herbaceous plants, and therefore one of the surest ways of preserving them safe through winter is to draw earth over them. In the spring they can be unearthed and then divided and set a trifle deeper than before, which is all they want. We are often asked how to preserve Carnations, Chrysanthemums, Pansies, Phloxes, Hollyhocks and so forth safe till spring. The principles here laid down will explain the practice.

Most of the tender plants that we desire to preserve over the season, have now been lifted from the borders, and removed to winter quarters,—and in a few weeks the beds will present a rough and forsaken appearance It is too often the practice to leave the borders just in this neglected condition till spring time returns. But the person of true taste finishes up the beds, and makes all tidy. In the absence of summer flowers, even order pleases.

But many persons have a reserve ground in which evergreens have been planted out expressly with the view of moving at this season of the year to the flower beds. Taken up with good balls of earth they do not miss their move, and by a little taste, a beautiful winter garden is the result. We have now so many dwarf hardy evergreens just fitted for this sort of work, that great scope can be given for the most varied effect.

It is not generally known, although repeated over and over again in our journal, that death from cold in winter is as often as not, the effect of impaired vitality during summer. Hence, if a plant is in dispute about hardiness, it is frequently enough to decide the question, to know whether it was free from mildews or leaf blights during summer. Not only these matters, but other things impair vitality and thus prepare for the hand

of death, before even the icy time ; and a very dry season is especially one of the worst of these evil influences. The last season was a particularly dry one in many places, and many plants had as much as they could do to hold their own. Amongst these there will probably be great mortality if we have anything like an average hard winter. It will be wise, therefore, if we have anything particularly valuable, to prepare to shelter them from cutting cold, dry winds, or other severe winter conditions.

Almost all young trees are tenderer than they are when older. It is therefore no test of the hardiness of some rare thing, that a small plant is killed in the winter. Silver Firs almost always get killed back for a few years in this section, unless protected, but yet gain a little in strength. After they are ten years old they will endure our hardest weather. So Spanish Chestnuts, English Walnuts, and many others, will die back considably, until they get strength. Therefore, protect any valued young plant, if possible, no matter how hardy its reputation may be.

FRUIT GARDEN.

No wonder those who watch the proceedings of Pomological conventions, are often puzzled by the apparently contradictory opinions offered as to the merits of various kinds of fruits. The facts are no doubt accurately reported. One for instance asserts that his Vicars are worthless,—his next door neighbor, perhaps, declares it one of the finest varieties he ever tasted. We have often noticed that both of these classes are right. The only thing which astonishes us is, that the one who has the inferior fruit, and knows his neighbor has it of the highest excellence, should condemn *the variety*. But this is the way of the fruit growing world. Each one thinks his knowledge of culture perfect, and if the fruit does not come up to the first-class quality in his hands, all other people's experience is ignored,—the variety must be worthless. We have a friend of this class. Some first class varieties on his grounds, he calls worthless. The fruit is never of the size represented in the books; and when it becomes soft, is insipid. We told him that his trees lost their leaves too early. They were suffering from leaf blight ; but he thinks the leaves fall early because they "ripened early." We have never been able to convince him that this early falling of leaves, is of the slightest injury. On his grounds is a Vicar of Winkfield, which being out of the way of his careful culture, bears fine fruit every year ; but this year about the usual time of the leaf blight's appearance, some caterpillars ; carelessly treated, eat off the leaves of one side of the tree. On this side he has half-sized worthless pears, on the other half, fruit of the usual excellence. Now he is satisfied that the leaves cannot remain on too long healthy for the tree's good How we wish we could impress this lesson on all fruit growers ! We have often given our opinion that this blight, which causes the fall of the leaf before the maturity of the fruit, is a greater foe to pear culture than the fire blight, which destroys a whole tree in a night, ever has been. Those who have pears in this condition should have them grafted over again with sorts which have a better habit of holding their foliage. This is the most certain remedy we know.

Pear trees that have not been judiciously summer pruned will require some little in the early winter months. By far too many branches are left on most trees.

When the tree is in leaf, the one branch smothers out the other, and, remembering what we have already said about the value of healthy leaves, few leaves arrive at that perfection necessary to perfect the best fruit. Therefore, prune out enough of the weaker ones to give the rest every chance to develop their leaves to the fullest extent. Also prune so as to assist the plant to a conical form, as this enables the light to act better on all parts of the tree leaves. If trees have been neglected, in pruning now severely to get them to this shape, the result will be to make them throw out shoots still more vigorously from near the parts cut away. When these shoots appear in spring, pull them out while young with the finger and thumb. The current of sap will then flow strongly into the shoots left, and the ratio of growth will in the end be nearly equal through all the branches. The flow of sap through a tree is nearly like that of water through an uneven country. A very little obstruction will turn the course ; but that, once started soon becomes as great a stream in the new, as in the old channel.

Apple trees have a habit when old of pushing out sappy shoots along the main branches. These should be cut away in addition to a similar thinning as recommended for the pear.

Dwarf apples and dwarf pears should be examined now to see what the borer is doing for them. This is the time when they do the most

destruction, as they are boring down into the stems for winter protection. A cut with a jack knife *up and down* the stems so as to avoid girdling as much as possible is the most certain destruction. Then, if in spring, before the parent insects begin to work, oiled paper, or rather tarred paper, be put about the stem near the ground they can be *kept out*. It is strange that with so little time as borer hunting takes, so many thousand trees should be allowed to die from their attacks every year.

Above all for both apple and pear orchards, we bespeak a liberal dressing—a top dressing of something or another. If no manure is to be had, even common road sand will be found to have a beneficial influence.

Poverty of the surface soil is oftener a cause of fruit failure than "grass," "change of climate," or many imaginable ills brought up from some ghostly cavern of thought to cover up the poverty of pocket or of industrial inclinations.

Strawberries are much better when protected through the winter no matter how "hardy" they may be. Very coarse strawy manure is the best material, which can be raked off in early spring. A few inches is sufficient, just enough to keep the sun off when frozen, which all our readers know, by this time, is the chief cause of loss by frost.

VEGETABLE GARDEN.

In growing trees, we want a hard woody structure, hence we keep the roots as near the surface as possible, and give them no encouragement to run deep. In growing vegetables it is just the reverse. Here we do not want a woody but a cellular sappy growth, and the deeper and richer the soil, and the more we encourage the roots to run down into it, the better it will be for our crops. For want of knowledge of these facts, many otherwise intelligent writers in books and horticultural journals lead their readers astray. They say that "a soil the best suited to grow cabbages or corn is just the thing for fruit trees." It is no such a thing. We recommend to our readers never to plant anything but vegetables in a vegetable garden. Whenever there is time, or not too much frost through the winter, subsoil and manure ; and while for trees the manure will be found the most good spread on the surface, for vegetables it will be found most effective when thoroughly worked in through the soil.

In those parts where the frost has not yet been severe enough to injure the Celery crop, it may have another earthing up. Care must be exercised in the operation not to let the earth get into the hearts of the plants, or they will be liable to rot. Where the plant has evidently finished its growth for the season, measures should be taken to preserve it through the winter. For family use, it is probably as well to let it stay where it is growing, covering the soil with leaves, litter or manure, to keep out the frost, so that it can be taken up as wanted. Where large quantities are frequently required, it is better to take up and put it in a smaller compass, still protecting it in any way that may be readily accessible. It always keeps best in the natural soil, where it is cool and moist and free from frost, and whatever mode of protection is resorted to, these facts should be kept in view.

Beets, Turnips and other root crops will also require protection. They are best divested of their foliage and packed in layers of sand in a cool cellar.

Parsnips are best left in the soil as long as possible. If any are wanted for late spring use, they may be left out to freeze in the soil, and will be much improved thereby.

Cabbage is preserved in a variety of ways. If a few dozen only, they may be hung up by the roots in a cool cellar, or buried in the soil, heads downward, to keep out the rain, or laid on their sides as thickly as they can be placed, nearly covered with soil, and then completely covered with corn stalks, litter or any protecting material. The main object in protecting all these kinds of vegetables is to prevent their growth, by keeping them cool as possible, and to prevent shrivelling by keeping them moist.

Cabbage plants, Lettuce and Spinach sown last September, will require a slight protection. This is usually done by scattering straw loosely over. The intention is principally to check the frequent thawings, which draw the plants out of the ground.

In making new vegetable gardens a south-east aspect should be chosen, as far as practicable. Earliness in the crops is a very great desideratum, and such an aspect favors this point materially. Too great a slope is objectionable, as inducing too great a run of water in heavy rains. The plots for the crops should be laid off in squares or parallelograms, for convenience in digging, and the edges of the walks set with box-edging. If water can be introduced, it is a great convenience.

Sometimes Broccoli does not head before there is danger offrosts, especially if growing vigorously. If taken up with small balls of earth, and set in a damp cellar, they will still perfect themselves.

Asparagus beds, after the tops have been cleared off, are better covered with litter or stable manure. The plants shoot earlier for it next season.

When the ground becomes frozen, or no other works offers, preparation can always be made for advancing prospective work when it arrives. Bean poles may be made; and if the ends are charred, and then dipped in coal tar, the commonest material will be rendered nearly equal to the best cedar.

HOT AND GREENHOUSES.

Plants stored away for the winter in cold pits, require more care for the first month or so than at any other time through the winter season. Many of them have unripened shoots, or shed many of their leaves, and unless these be cut off and removed, gangrene and decay commit distressing havoc. Air should be given at every opportunity, and nothing omitted that will, in any way tend to harden the plants, and send vegetation to rest. No more water should be given than just sufficient to prevent withering, and the temperature should be kept as near 40° as possible, and every chance taken to render the air about the plants dry. When frost actually does come, no further care than protection from its embraces will then be required. Plants so hardened, may stay covered up for weeks, without any light or air, and secure from the slightest injury. Mice constitute the most troublesome enemy in a pit closed for any length of time; but we have as yet found nothing better than the recommendation given in back volumes, namely, to take peas and soak them twenty-four hours in water, then roll in arsenic and sow in a pot, as if in the regular way of seed sowing. A few pots so prepared, should be placed in the pit before permanently closing up. The mice usually find these pots at their first entrance to the pits. If placed on the soil, they seem to guess your secret, and will not "bite."

Plants in cellars need much the same care as those in pits. Avoid heat and dampness; frequently however, plants suffer through getting too dry. They should be looked over, at any rate, once a month, and a little water given, if likely to become entirely dry.

Plants in windows and rooms usually suffer from excessive waterings,—very dry air about them,—too great a heat, or too much shade. As much as possible, room plants should be selected for their indifference to these requirements. Succulents, such as Cactuses, Mesembryanthemums, Rocheas, Crassulas, Aloes, &c., care not how dry the room, but they demand all the sunlight possible. Camellias, Chinese Primroses, Azaleas, Dicentra spectabilis, Polyanthuses, Violets, Hyacinths, etc., do not mind a little shade; but they abhor a high temperature. Others again, while disliking heat, want light; of these are Calceolarias, Cinerarias, Geraniums, Pelargoniums, Pansies, Daisies, Tree Carnations, perpetual blooming Pinks, Roses, and the like. "Leaf plants," for the most part, like a close, moist atmosphere, and a moderate degree of heat to do well. For these, glass partitions and closely glazed cases are usually employed. A great error in the growth of the plants in these cases, is to suppose they require no air. The closeness is to secure a moist atmosphere, not to exclude the air. Whenever, therefore, the temperature is low, and little evaporation going on, the opportunity should be seized to air the cases; a few moments are sufficient. A very pretty plant arrangement may be made in parlors that have bay windows; the whole window may be closed off from the main part of the room by a sash, and filled with plants. Some on the floor,—some on shelves, and some pendant from the roof. A common oil lamp will be quite sufficient, with the usual window shutters, to keep out frost during the night or extra severe weather, while the regular day temperature of the room will suffice for that time. When the lamp is burning, provision should be made for the admission of fresh air from the room at the bottom of the case, and for the exit of consumed air at the top of the case. This is best accomplished by a tube to and from the lamp.

It must, however, be remarked that the fumes of burning coal gas is highly injurious to vegetation, and any adaptation of heating by it will fail, unless provision be made to lead the fumes away. With this precaution, gas lights in towns, and cities, where it can be had cheaply, would be very useful in heating small parlor plant cabinets.

To those who have larger plant cabinets or small conservatories, connections with heaters or hot water from kitchens ranges will suggest themselves. This is often done. The great error we have often noticed is, that the heat is led to the back only, when it should be continued

right to the front or coldest part of the house. When heaters are employed, the oxygen of the air is usually defective; and, besides, the air is very dry and ungenial to healthy vegetation. Evaporating pans around the mouth of the air flues should be used in such cases,—syringing done at frequent intervals, and pure fresh air given whenever a warm out-door spell furnishes the opportunity.

The most critical season to greenhouse plants is fast approaching. A very common error, especially in houses heated by smoke flues, is, to keep the temperature too high. Unless the house be heated by hot water, a temperature of 55° will do perfectly well. The absorbent property of heated bricks, in flues, is so great, that the excessive waterings necessary to replace the moisture they absorb is more injurious to the plants than a moderately low temperature. In a house heated by hot water, a temperature of 65° may be maintained with advantage. The house will be very gay with Habrothamnus, Cestrum, Begonias, Pentas, Plumbagoes, and so on, and the syringe must be kept in daily requisition. It is highly advantageous to put a little sulphur, lime water, or soft soap into the syringing water occasionally, as the red spider, mealy bug, or scale, respectively, may make their appearance; this, with a vigorous use of one's eyes and fingers at times will keep them pretty well in check. Orchidæ, those which bloom on finishing their growths, will begin to add considerably to the attractions of the hot-house. As any come into flower, they should have less water at each time, but be watered more frequently than they have been accustomed to; a very slight "dewing" with the syringe is all that is required. Heavy waterings and high temperature, together, destroy more orchids than many would dream of Still atmospheric moisture must be retained for them in any case.

COMMUNICATIONS.

ADAPTATION OF VARIETIES TO SEASON.

BY MR. J. W. KERR, DENTON, MD.

The unprecedented drought which began in early summer, upon this peninsula, has ended, at least in this section, as we have been very recently visited with several copious showers of rain.

The crops together with most of fruits, ripening in the after part of the summer and early autumn suffered greatly for want of rain. Many varieties of late peaches fell far short of their usual standard of size and excellence; while others, comparatively few though, seem to battle with great vigor against the opposing season, ripening fruit of good size and quality. While a difference manifested itself in varieties of the peach, there was also a corresponding difference shown amongst the plants of small fruits, such as Blackberries, Raspberries, Strawberries, etc; most striking, though with the latter. As for instance, on the same kind of soil, and under precisely the same treatment, while the Jucunda, Ripowam, Lady Finger, Triomphe de Gand, and several others died out almost entirely; the Colfax, Wilson, Downer's Prolific, Peak's Emperor, and N. J. Scarlet, retained a good color and made a fair quantity of yearly plants.

This season though very unfavorable, has served to develop many interesting facts in relation to fruit growing here; and I think a majority of our farmers now entertain the belief that their soils are much better adapted to fruit growing and trucking, than the raising of wheat and other grains, in the manner as prescribed by their grandfathers, and to which very many of them closely adhere. "Book farmers and *new ideas*" are beginning to occupy more attention here than formerly; indeed, some of our younger farmers talk "novelties" right freely; and ere long the whole system (if the word is allowable) of farming as practiced in general here will be impartially revised and thrown aside, substituting modern, practical and improved plans, for the management of the soil.

Speaking of "novelties," refreshes my mind with a circumstance upon which your opinion, through the *Monthly* would be read with much gratefulness by the writer. It is this: A nurseryman, from an adjoining county, offers for sale a variety of peach which he represents bears *three* crops annually—blooming but once however—and when the first crop is ripe, (the peaches of which are large size), the second crop is only about half grown, and the third quite small. The second does not attain quite

as large a size as the first, and the third is still smaller than the second. He has propagated or budded largely, and is selling the young stock very readily. Now if such is the character of the original tree, is there any probability, that the young trees, budded from it, will be the same in regard to the number of crops? We of course have our opinions and express them freely too; but the sensation is such amongst planters here as to demand higher authority. Therefore I fall back upon my horticultural text book, —the *Monthly*.

[The question of adaptation of varieties to season is a very interesting one, and doubtless other contributors could add much to what Mr. Kerr has kindly given us. The novelty in the Peach we expect to find rather in the manner of stating an old fact, than in the fact itself. Some varieties of fruits ripen their crop all together; others are spread over several weeks. The Dorchester Blackberry, for instance, ripens a few berries before the Wilson, and will afford some after the Wilson is gone; yet the *bulk* of Wilson is ripe before the average crop of Dorchester is reached. There are but one or two pickings from Wilson,—Dorchester has several. In this sense,—successive ripenings,—we may say Dorchester has "several crops" a year. If this is the sense in which we are to understand the Peach as having three crops a year, that is to say it spreads the time between the first ripening and the last over a longer period than others, it may be a valuable variety for some purposes. But if the understanding is to be that there are three distinct crops, with weeks intervening between each picking, we should prefer to see the article in this condition before investing either faith or works therein.—ED]

PRACTICAL RESULTS IN GRAPE CULTURE.

BY MR. LORIN BLODGET, PHILADELPHIA.

Having for some years past entertained a more confident belief in the capacity of the American climate, east of the Rocky mountains for Grape cultivation than I think is generally held by horticultural authorities, and having something to apologize for in regard to opinions expressed in 1853 (Essay on climate, in Agricultural reports), I beg to send you four or five samples of grapes grown, without unusual care, at my residence in this city. I picked them this morning as representative samples, rather than as the best samples on either one of the vines. I think the quality not only good, but excellent; and the productiveness and vigor of the vine, of which I have deliberately tried to the utmost to settle the question in my own mind as to what they will bear, are in the highest degree satisfactory. The Concord and Diana vines bore the second year from planting, and the third from the bud. The Rogers' the same; but I have had four crops from the first named, and the last bear this year for the first time. The Diana and Concord vines began with 125 bunches to the vine, increasing each year steadily, and bearing this year 275 to 325 bunches each. Of course a few bunches ripen imperfectly, but not more than 20 to 25 bunches on any vine fail to ripen well.

The three No. 9, Rogers' Hybrids are in perfect leaf and vigorous growth with their present crop of 40 to 150 bunches each, and of the No. 9 and 19 not a grape has failed to ripen perfectly. No. 1 has a few bunches that may not ripen, but the vine has grown away from the side shoots below on which they set, so far that it could hardly be expected that would ripen. This vine has grown 10 or 12 feet, and No. 9 has grown fully 15 feet this year—several branches growing from 6 to 15 feet on the last named, yet it has ripened 150 bunches of grapes, without a single failure, and in this its first year.

I give a reference to the quantity on each vine, both in this and in former years, corresponding to the samples sent. Concord, in 1866, 85; 1867, 125; 1868, 225; 1869, 325. Diana, 1866, 70; 1867, 100; 1868, 220; 1869, 275. Rogers' No. 1, (White) first bearing in 1869, 108 bunches. Rogers' No. 9, (Red) first bearing in 1869, 155 bunches. Rogers' No. 19, (Black) first bearing in 1869, 43 bunches.

The *Delaware* has borne a few bunches, on a small vine of the first year, perfect in quality and ripe September 10th. *Hartford Prolific* has also borne some 50 bunches, very good, the first year, ripe at the same time. *Elsinburg*, some 20 bunches the first year, also excellent and ripe September 15th. Isabella and Catawba vines bear reasonably well, *but do not ripen*. They bear no comparison to the Rogers' Hybrids. The *Tokalon* is also a failure, and the *Maxatawney* but little better. A grape sent me as the *Adirondac*, is either the *Diana*, or some other unknown to me.—prolific, but poor in quality. The samples of Rogers' No. 9, were cut 20 and 24 feet from the ground, the vine running over a balcony.

I respectfully submit these as a small contribution to our practical knowledge of grape growing, which is yet very imperfect, as regards the only point of interest to me, namely, practical results within every one's reach.

I should also mention a sample of Black Hamburg grown in the open air—one of 10 bunches on the vine, nearly all of which perfected the fleshy character of that grape as grown under glass, but the bunches remaining out during the late storm, were injured by it and were eaten by flies, requiring many to be cut away.

[Excellent grapes. The Rogers' 1, 9, 19 especially so —ED.]

HINTS ON THE TREATMENT OF ORCHIDS.

BY MR. G. SUCH, SOUTH AMBOY.

In a late number of the *Gardener's Chronicle*, I noticed an article headed "Brief notes upon Orchids." The author, Mr. B. S. Williams, being one of the best Orchid growers in England, what he says on the subject is well worthy of attention; and as many are blundering along with small collections of these interesting plants from which they are deriving but little satisfaction, it has occurred to me that a few hints from Mr. Williams might prove acceptable.

The chief conditions of success, he says, are moderate heat, an abundance of fresh, sweet air and moisture, with full exposure to the light, but with shade from the direct rays of the sun.

It is not, of course, meant by the term "moderate heat," that the degree of warmth suitable to an Odontoglossum would suit a Vanda; but the idea is that the advocates of the "cool system" on the one hand, too often carry their treatment to a ruinous extreme with those varieties to which the cool system, properly applied, would be the perfection of good treatment; and on the other hand, that the stifling, steaming heat that is generally kept up in the East Indian House, is just as objectionable an extreme.—Many of the so-called "cool Orchids" can endure a much lower temperature than is generally supposed; and indeed Mr. Roezl, the botanist and collector, says he has found Odontoglossum Ehrenbergii covered with hoar-frost. Still it is unwise to risk the minimum of temperature, and in practice it will be found that 45° or 50° in winter, with moderate moisture, and as nearly as possible 65° or 70° in summer will keep most of the "cool Orchids" in perfect health.

This, it will be noticed, is the "temperature of an ordinary greenhouse," and so far as temperature is concerned, an ordinary greenhouse will grow perfectly well all those Terrestial and Epiphytal Orchids that can be treated under the "cool system." But the Epiphytal Orchids, being those that in their native country are mostly found on branches of trees, require more moisture in the air, less of the blazing sun, and less wide opening of sashes than is given to a general collection of greenhouse plants, and so, in spite of what may be said to the contrary, this part of the Orchid family will not thrive under the usual greenhouse treatment.

This, however, is a difficulty easily overcome, as part of the greenhouse can readily be set off from the remainder, and in this part the Orchids can command just the amount of air and moisture they require.

And now about the East Indian kinds, including the lovely Vandas, Aerides, and Saccolabiums. Mr. Williams says, these will grow strongly and flower profusely in a house ranging during winter from 60° to 65° and with 65° as a minimum during summer. During the months of May, June, July and August a good growing heat should be kept up, and this will be about 80° by day, or with sun heat, 85° to 90°; and great attention should be paid to having the atmosphere well supplied with moisture, as it is from the air chiefly that the roots obtain their food

It has been mentioned above that most Orchids require shade from the direct rays of the sun; but this statement admits of some modification. Towards the end of September, or in October, many should be finishing their growth, and the direct rays of the sun at this late season of the year, are of advantage in bringing on a healthy maturity of the bulbs. As an example of this, may be mentioned the treatment needed by most of the Dendrobiums, and Dendrobium nobile especially, well known as one of the loveliest of the class. It flowers in winter or early in spring,—the flowers lasting two or three weeks in perfection. Generally, after the flowers are faded new growth begins, and this must be encouraged with brisk heat, plenty of moisture in the air and a good supply at the roots, which should never be allowed to become dry while growing After the growth is finished—in August or September—the plant should be moved into a cooler and more airy house, and be subjected to the full sunshine, unless it be very unusually hot. As the object is to give a good long

rest preparatory to flowering, no more water should be given at the roots than just enough to keep the bulbs from shrivelling. With this treatment it flowers freely.

Finally, Mr. Williams says, avoid anything in the shape of decay as one would a pestilence, —all rotten wood, sour moss, or uncleanness of any kind ; and to this end good live sphagnum moss and fibrous peat should be used for potting and plenty of crocks for drainage.

As a last word from myself, I would most sincerely advise all beginners in Orchid growing to get into their collections none but healthy plants, as otherwise they will have a great deal more than the fair share of difficulty and vexation to encounter.

TEN YEARS' EXPERIENCE IN PEAR CULTURE.

BY J. S. HOUGHTON, PHILADELPHIA.

Read before the Pennsylvania Horticultural Society, Tuesday Evening, Oct. 5, 1869.

The *Pear*, in its highest condition of cultivation, is one of the most capricious of fruits. Although apparently a hardy tree, the Pear is subject to a variety of accidents which render the production of superior specimens of fruit exceedingly uncertain in all parts of the world. Pears may indeed be obtained in almost every country and climate, except in the tropics ; but the proportion of fine dessert fruit, or specimens suited to the exhibition room, as compared with the entire crop, is everywhere exceedingly small. It is the fashion to praise standard trees as the only kind which can be depended upon to produce constant crops of fine fruit ; when the fact is, that the *finest* fruit has not been produced on standard trees, and that crops of good marketable fruit cannot be obtained from such trees for any length of time, with any degree of certainty. On standard trees, even in their best condition, scarcely half of any crop is marketable at one dollar per bushel, and not over one quarter of any crop is suited for the first-class fruit stores.

The finest pear orchards in the United States, including the best gardens near Boston and the specimen grounds at Rochester, N. Y., cannot produce twenty-five dozen specimen Pears of any one variety (omitting the Bartlett and Seckel) without completely stripping the crop of all its good fruit, and reducing the balance of the stock below first quality.

Twelve or fifteen dozen Pears, of one variety, sent from one garden to a leading fruit dealer of New York, has annually exhausted the most celebrated orchard in America to such an extent, that the proprietor could not show half a peck more of respectable fruit to any body.

The truth is, *fine fruit* is the exception and not the rule, with the most successful Pear growers, and the exhibition of plates of selected fruit at our horticultural exhibitions, when looked upon as *samples* of the entire crop, is, literally speaking, a gross deception. And especially is this true of fruit grown on standard trees.

These remarks apply not only to Pear culture in America, but to the culture of this fruit, so far as known, throughout the world.

It is generally supposed that in *France*, the Pear flourishes in its happiest condition, and that the fruit is produced with little or no trouble, in the greatest abundance and perfection.

This supposition is not true. The climate of of France is certainly most favorable to the Pear, and a vast amount of fine fruit is produced in that country ; but the best fruit, and the larger proportion of that which is sold by the fruit dealers of Paris, and in Covent Garden, London, is not obtained from standard trees, nor yet from dwarf pyramids planted in the open garden ; but is the product of trees trained on walls and trellises, in the style called espalier, greatly varied in form, but still trained and pruned in the most systematic and careful manner, on walls, fences and trellises.

These trained and pruned trees, even in the genial climate of France, are many of them provided with copings, shutters, canvas, mats and various other contrivances to protect them against Spring frosts ; they are pruned and tied up with the greatest skill ; syringed with liquids to destroy insects ; the fruit is thinned with an unsparing hand ; and they are otherwise tended with infinite care and watchfulness. Yet, after all, the finest Pears are not produced by these means, even in France.

In the Islands of *Jersey* and *Guernsey* off the coast of France (called the Channel Islands,) is found a climate and soil which is generally supposed to have no superior for Pear culture.— There the Chaumontel Pear has been grown, by the ton, in the highest degree of perfection numerous specimens weighing 28, 30 and even 32 ounces, and the average weight of fine selected fruit running about 12, 15 and 18 ounces, or

higher than that of fine Duchesse d'Angouleme in other parts of the world.

Now, how are these Pears grown ? And what are the difficulties of the culture ?

In the first place, they are *not* grown on standard trees, nor yet *in grass*. They are not even grown on dwarf trees, planted in the open ground; but they are grown, for market purposes even, trained like grapes on walls and trellises, severely pruned and carefully tended, as it is found that fine fruit only is worth sending to a good market. And not only is this true, but the most distinguished fruit grower in the Island of Guernsey produces his very finest Pears in pots, in the orchard house, so called, under glass. Gales, insects, fungus and other evils prevail in these islands to a discouraging extent ; but the people are industrious, frugal, content with small gains for patient and honest labor, and hence they *persevere*,—and aided by a delightfully moist atmosphere, and a genial climate, they excel even the French cultivators, in the production of the Pear. But they cannot, even there, "gather grapes from thorns, figs from thistles," nor Pears fit for Covent Garden market from unpruned and un-tended standard Pear trees *in grass*.

In *Belgium* fine Pears are obtained with as much ease and certainty as in France, and some kinds flourish even better than in more southern climates. Many of our finest seedling Pears originated in Belgium and the north of France. But in Belgium the cultivators of fine fruit train their trees in walled gardens, in various forms, on walls and trellises, as espaliers and careful pyramids ; and the fine fruit which we hear so much about is not produced on standard trees. It may be true, and no doubt is, that in Belgium and Germany a vast quantity of good fruit, and a much greater quantity of inferior fruit, is produced on standard trees on the roadsides and elsewhere (as cherries are.) but it will be found, that even in Belgium the fine *fruit* which the pomologists talk about, is grown upon carefully pruned and skillfully trained trees, tended with professional skill, in walled and protected gardens, and not on standard trees, planted in open fields, nor in uncultivated orchards.

In *England* Pear cultivators are worse off in every respect than in either of the countries yet named. The plain, stubborn fact is, that few, if any, fine Pears are grown in England, on trees of any sort planted in the open ground, or even on trees trained on walls or trellises, without infinite trouble in planting, and great care in protecting the blossoms from Spring frosts. We might almost assert that in England fine dessert Pears cannot be grown at all, in the open air, without protection, except occasionally in favorable seasons in the more southern countries, and in certain fortunate localities.

Covent Garden market, in London, is chiefly supplied with fine dessert Pears from France, Belgium and the Channel Islands. The English nobility obtain some respectable dessert Pears from their walls and trellises, and the English people get some eatable fruit from their standard Pear orchards, in favorable seasons,—but the finest and most perfect fruit, (I might almost say the only really fine and perfect Pears grown in England) are obtained from trees protected by walls and coverings, or from trees grown under glass.

In *America* the history of Pear culture has been about the same as in England and Europe. At Boston, where Pear culture has been pursued with much zeal for forty years or more, a good degree of success has been achieved. The late Autumnal Exhibitions of the Massachusetts Horticultural Society, aided by the fruit-growers of Western New York, have presented numerous specimens of fine dessert fruit which it would be safe to defy the world to equal.

And how were these Pears produced ? And what are the difficulties attending the culture?

I have visited, repeatedly, all the most celebrated Pear gardens in the vicinity of Boston, at Cambridge, Brighton, Roxbury, Dorchester, &c., and have examined the circumstances and mode of culture. The fine dessert Pears are mostly, if not all, produced in small, *cultivated gardens*, surrounded by houses, lofty trees, fences and barns, and generally upon small dwarf or half standard trees, and not on standard trees standing in open fields or orchards, and most assuredly not on old neglected trees *in grass*.

Many of the trees producing this fine fruit have been double worked in the nursery or gardens,—and by far the finest specimens, if not the larger quantity of fine specimens, have been produced on *young grafts*, grown on old trees.

Such things as old standard Pear trees, pruned or unpruned, growing in grass covered fields, producing large crops of fine fruit, fitted for exhibition purposes, even Boston has not seen.

The finest Beurre Bosc ever grown near Boston, I happen to know, were produced on the tops of some large standard trees, in a garden in the village of Cambridgeport, the trees stand-

ing constantly in a thick carpet of fresh stable manure, the year round; but the proportion of crop to tree, or the proportion of fine selected fruit to the crop, would not, I imagine, if told, invite any speculator to invest his capital in the production of even such Pears by such means, with a view to profit.

I am well satisfied that in our wide-spread country, and with our varied soil and climate, the Pear may be cultivated on a large scale, with success, in the open field or garden; and that large quantities of good fruit may be produced on standard trees in open orchards; but I still contend that the fruit which will bring the highest price, and attract the most attention at horticultural exhibitions, will not be produced on old standard trees.

Now, what are the difficulties of Pear culture at Boston? I answer, the trees are frequently injured or killed by the severity of the Winters, and the blossoms are frequently destroyed by late Spring frosts. Insects and blight are very destructive, and fungus does its dark and dirty work almost as badly as elsewhere. Still, the influence of the saline atmosphere, and the granite soil, combined, produce much fine fruit; but not finer than Western New York, or Central Pennsylvania, or even Maryland.

Western New York has had perhaps as high a reputation for the production of fine dessert Pears as Boston. What is the trouble there? I answer, the Summer blight or fire blight which prevails to such a fearful extent as to frighten the boldest planters. Western New York has also its share of insects and fungus; but if it were not for the blight, the sections of country bordering upon the lakes would produce immense quantities of fine Pears. Still the trees from which the fine fruit has come, which we have seen at our exhibitions, are mostly dwarfs or half standards, planted in cultivated and protected gardens, and not in open orchards.

How is it in Pennsylvania, Delaware and Maryland?

Nearly all the fine dessert Pears produced in our own State, which have taken the premiums of the Pennsylvania Horticultural Society, for the last fifteen or eighteen years, have been grown within the built up portion of the city of Philadelphia, (by the late Isaac P. Baxter, at Fifth and Washington streets,) in a *garden* surrounded by close fences, dwellings, churches and factories, and *chiefly upon grafts!* The trees were originally French dwarfs, and are now supposed to have taken root from the Pear stems; they have been constantly tended, pruned, watered, fertilized, cultivated and even "pow-wowed" and "magnetized" as father Baxter used to say—and they were not *in grass*! The crop was never very great, and the best and the most of it was always seen on the plates of the Horticultural Society. In some other gardens in the city, dessert Pears have been grown, so monstrous in size, so beautiful in color, so exquisite and waxy in skin, and so perfect in all respects, as to command the earnest admiration of all beholders.

But plant the same trees six miles out of the city, in similar soil, and give them even better culture, and the fruit produced will be cracked, spotted with fungus, and disfigured by the attacks of insects to such a degree as to render it unfit for sale or even for eating.

The "why and wherefore" of these vagaries and caprices of Pear Culture I shall not attempt fully to settle, although I may throw out some suggestions on these points.

SOILS AND FERTILIZERS.

What are the conditions of soils, fertilizers, &c., which have been found most favorable for successful Pear Culture?

As a general rule, a fresh, clay loam, resting upon a sandy or gravelly sub-soil,—or, a slate soil, with a similar sub soil,—is found most suitable for the Pear, especially for dwarfs. It may be questionable whether *any* soil, artificially manured, can equal a soil just reclaimed from the forest; but it may also be true, that an orchard planted upon a fresh soil will "run-out," in a very few years, unless constantly fertilized.

I feel confident that a rich old garden soil is not suited to the Pear,—nor any soil of a rich loamy character, when freely supplied with composts made from animal matter, such as slaughter-house manure, night soil, &c.

A thin, dry, harsh soil is, of course, not suited to Pear trees.

Freshly ploughed grass land, which has been well manured for corn, grain and grass, suits nursery stock, but old pastures are not rich enough.

What of fertilizers or manures for the Pear?

I have studied the subject long and carefully, but I confess that I cannot answer it definitely.

We have been taught that *lime*, in the soil and in the compost, is one of the chief requisites for Pears; that *potash* or wood ashes is indispensable; that *super-phosphate of lime* or phosphoric acid is one of the elements positively needful; that *iron* and *salt* are both highly useful in small quantities; that *ammonia* ought not to be forgotten; that a little *guano* does good and not harm; and that *stable manure* is also desirable.

Carbon, in the form of straw, and leaves, and charcoal; muck, peat and sods; and vegetable matter generally, have been much commended as fertilizing agents for Pears.

I have employed tons upon tons of all these chemical elements with care and discretion, and thousands of bushels of charcoal and other carbonaceous matters, upon my principal Pear orchard, covering about 18 acres of land; but while I think I have seen the good effects of these fertilizers, to some extent, and believe my orchard would have seriously declined without them, I have never been able to discover the direct, evident and unmistakable effect of any or all these substances, to any striking or paying extent.

One of our popular works on Pear Culture, by a former officer of the American Pomological Society, says:—

"Let every fruit raiser, each Spring and Fall, prepare such a compost as the following, and the results of its application to trees will *astonish* and *delight* him:

"A pit should be dug and half filled with leaves, swamp muck, or peat, or any rubbish of organic matter. Into this should be thrown all the bones and spoiled meat, the carcases of fowls and animals, all the old fish and meat brine, night soil and liquid manure from the stables. To the above *iron* should be added, in some shape, and the whole should be covered with a fresh supply of muck. The effect of such a compost, applied to fruit trees, is *almost startling*, in the rapidity and hardiness of growth it induces, and in the *luscious* and highly *colored* fruit a soil so fertilized will bring forth!"—*See Field's Pear Culture*, pp. 32,33.

I append my comment:—I have tried the experiment indicated and have failed to observe the surprising result which the writer describes: that is, in popular phrase, "I can't see it."

Still, I continue to use lime, potash, phosphoric acid, &c., on my orchard, because science tells me to hope and believe that they are useful, and I know of no other agents which promise so much.

I once thought that stable-manure, night soil, guano and all ammoniacal substances probably dangerous to Pear trees. Prof Mapes insisted upon this idea to the day of his death. My own opinion, however, was changed a few years ago, by a passage in Balfour's Botany, which notices the fact that the seeds of Pears, are highly nitrogenous, and hence, that ammonia, in some shape, is required to assist in their formation. I now think a moderate supply of ammonia is absolutely required by Pear trees, perhaps quite as much as by a crop of wheat.

STOCKS FOR PEARS.

The proper stocks for Pear trees presents another important question.

As to dwarf Pear trees on quince stocks, I am not infatuated with them, nor am I positively opposed to their use. I have, perhaps, 20,000 dwarf Pear trees in my orchard, many of them eight and ten years planted. They have never given me a good paying crop; but the chief reason for this, I am satisfied, is to be found in the effects of climate, and improper pruning and management, and not in the fact that the trees are dwarfs. My standard orchard, of which I have several acres, has done no better, but rather worse, so far as fine fruit is concerned, and indeed any fruit.

When I speak of improper pruning and management, I allude to my past system. Let no opponent of pruning suppose that I have abandoned close pruning; on the contrary, I am now more radical and extreme in my practice than ever, and I believe I am right. I hope yet to conquer some of the difficulties of Pear culture, and to secure certain crops of large, fair fruit, when nature permits us to have any at all. I believe that the chief difficulty of growing dwarf Pear trees successfully, has arisen from the fact that most cultivators permit their dwarf trees to develop into *standards in size*, while they are still *dwarfs in their roots*.

For fine fruit, as I have already indicated, I would not employ standards as commonly understood, but I would, if I had plenty of room, resort to half-standards,—that is, low-headed, much pruned, frequently transplanted, standard trees, which could be treated and managed as dwarfs. The whole process of doing this, I have not time to describe. To obtain fine dessert Pears, it is necessary that every part of the tree should be within reach of a person standing on the ground, or on a small step-ladder which a man can easily carry from tree to tree.

My present opinion, is, that the perfection of Pear culture will be found to consist in growing Pears just as we grow fine bunches of Black Hamburg grapes, when each bunch is separately tended, and carefully thinned, and the vine

allowed to bear no more than its constitution will permit. The best Pears will never be produced upon the careless, hopeful, let-alone system, which is far removed from careful, scientific pruning.

SURFACE CULTURE.

In respect to the question of surface culture, ploughing and cultivating the Pear orchard, it will be understood by this time, that I strongly advocate constant surface culture. I do not intend to enter upon any extended argument upon this much-mooted point of Pears in cultivated soil and Pears in grass. I know very well that I have before me several devoted friends of the Nebuchadnezzar school, who are passionately fond of grass. But I am not disposed to give up my belief and my practice, for their "mess of pottage." A "dinner of herbs," and small scrubby Pears is not to my taste. I believe that the leaves of grass in the orchard, will drink up nearly all the small showers that fall in summer, and the grass roots will consume a large proportion of the food which should be enjoyed by the fibres of the Pear roots, and I believe that an unstirred soil is like an unmoved compost heap; few chemical changes take place in its substance. I firmly believe that the finest dessert Pears will never be produced, on large standard trees, standing in unmoved grass sod.

SHELTER.

As to the usefulness of shelter, against violent winds and cold storms, there can be no doubt. Belts of trees, and the shelter of buildings are highly useful, if not indispensable to success The influence of large bodies of water, as lakes or ponds, seems to be always favorable.

The effect of a saline atmosphere, coming from the ocean, when not accompanied by violent winds, seems also highly beneficial. The shelter of a mountain, or hill, on the West, apparently aids the production of fine fruit. The favorable influence of towns and cities, or of populous neighborhoods, surrounding Pear orchards, has already been noticed and is truly remarkable. The precise reason for the last named fact, I have not been able to discover. Insects, of course, are not so numerous in towns as in the country, and fungus may perhaps be destroyed by the sulphurous gases emanating from hundreds of chimneys.

In all parts of the world, the effect of not alone the spring frosts, but the cold rains and winds which prevail at the period of blossoming and setting the fruit of Pears, as well as peaches, &c., requires that some good protection should be provided against the effects of these rains and winds, if a certain crop of fine dessert fruit is desired.

A reliable writer in the London *Gardener's Chronicle* says, that there has not been a single spring, in England, for twenty years, without six degrees of frost, with cold rains, during the period when Pears and peaches are in bloom. Six degrees of frost, he says are dangerous to blossom buds just opening, and eight degrees, fatal. Also, that after Pears are set, if the tender fruit is subjected to six degrees of frost, with cold rains, the footstalks turn yellow and become dropsical, and the fruit falls off.

Another reason has been suggested by Mr. Jacob Seneff, of this city, for the falling off of young fruit during cold spring rains, which is very plausible. It is this: That the leaves during these cold rains, lose their vitality, become engorged with watery sap, and cease to elaborate and send back to the fruits the prepared sap necessary for their sustenance, and hence that the young fruit falls off for want of proper nourishment.

My idea then is that to be perfectly successful in *fine dessert Pear culture*, we shall be compelled even in America, to imitate the French and other European and English cultivators, and provide more careful protection for our fruit trees, by walls, fences, hedges, copings &c., &c. There is not one season in five, when in any single locality, the weather is so favorable at the blossoming period, and for two weeks afterwards, that we can count with any degree of certainty upon the successful setting of a crop of fine dessert Pears.

My opinion also is, that to obtain the finest fruit, we must look to the constant production of new wood, and new fruit spurs. I feel assured that the best fruit cannot be produced upon very old, long slender shoots, and old stunted fruit spurs. The fruiting wood and fruit spurs should not be more than four to six years old. The best method of pruning to obtain new wood and new fruit spurs, I cannot now describe. Suffice it to say, that my practice is drawn from the most approved European systems, which are now employed by nearly all the best cultivators, with some improvements (as I think) of my own. I feel perfectly confident that I have the most perfect control over the production of fruit spurs, and the formation of perfect fruit blossoms, whenever or wherever desired. And I feel confident also, that I can (with the aid of proper protection) secure certain crops of fruit every year, unless the seasons should be more adverse than usual. The question of expense in relation to the value of fine fruit, we have now to consider. Will it pay to obtain even fine dessert Pears, in the manner indicated? I think it will, but I am not yet fully prepared to answer that question.

ANNUAL PLANTS AND PARTS OF PLANTS.

BY WALTER ELDER, LANDSCAPE GARDENER.

Trees which are of largest growths and longest lived, have annual leaves and fibres, from which their whole structures are derived. Evergreen and deciduous are alike in this respect. A *leaf* is a diminutive shoot or branch, and by the force of growth becomes a branch, and even in its diminutive state, it will grow into a plant if taken off its parent; *fibres*, by force of growth become roots, and last many years as branches do; but without that they are of annual existence only, and new sets of fibres come every year in their place, just as new leaves take the places of old ones, and the same is the case with nearly all plants. No controversy can make it otherwise.

There is a class of plants called *annuals*, as they reproduce themselves by seeds within one year or a few months; but many plants called perennials are in reality annuals, or only last one year. Among *bulbs*, Crocus roots are planted in the fall; they bloom in spring, and produce new roots by early summer, the roots planted are gone. Gladiolus roots are planted in spring, bloom in summer, and mature new roots by fall, the old roots are ended. All other bulbs whose outer shells last several years, are made new internally; annually the bud or eye that sends up a shoot and blooms this year, is gone by fall, and new buds are formed by growth to do the work next year among tuberous rooted plants, see the root sets of dahlias and potatoes, they die off during summer, and new roots are matured by fall, to plant next year. Iris and Hemerocallis, though evergreens, have dead leaves replaced with new ones every year, and so it is with their fibres and the buds in their tubers. Herbaceous fibrous plants are each of one year's duration. The plant of Larkspur or Phlox that sends up a stalk and blooms, dies off after its work is finished, but others are made by the growth to do the same next year; and many species multiply their numbers greatly by this self-propagation. It is that which makes the heart of the bunches look dead. Polyanthuses, Primroses, &c., are also examples of the same; now a big bunch of those plants is a number of plants, each of which lasts only one year; so it is with Biennials, a Sweet William, Canterbury bell or Columbine plant with only one bud, (which is the real plant) and sends up a shoot and blooms, is dead by fall; but if young plants called suckers are made by the growth, they will do the work next year. So each individual plant is only of annual existence, and it is only by their self propagation by offsets, that they are called Biennials and Perennials. The Century Plant (Agave Americana,) having only one bud, dies off as soon as it is done flowering, but during its growth, it propagates itself by suckers; that is conclusive proof that it was only one plant, having only one bud and its offsets are new plants. One of the first secrets in gardening that we learned was, that *fibres were annual, as leaves were*. The roots of a gooseberry bush in spring, was the subject of our study; we thought everybody knew the fact, until it was announced in the *Gardener's Monthly*, which we thought too weak a statement for a highly gifted editor to make. But subsequently we have observed by the statements of others, that many cultivators never thought of such a thing, and were startled by the announcement, and have endeavored to refute the fact, so it must have been forced out of the editor by the wonderful dullness of those he addressed.

It is wonderful to see men very skillful in the culture of various crops, and yet have no knowledge of the physiology of the plants they grow so well, beyond the mere use to which they are generally applied.

We remember a gentleman of another science telling us that "the whole sap of a tree went down into its roots in fall, and staid there until spring, and then went up to the top," and to prove the saying, he cut off a twig and showed us that their was no moisture in it, and said if he cut a twig in spring, the sap would run out; there was a pond close by wholly frozen over; we asked if there was no water in that pond; he said yes, but now it is ice. Well, said we, if we cut the ice it will be dry, and in spring it would be all water. We thought the sap of trees became solid by the cold as water gets solid in ice by

hard frost. No, No! said he, "do you think that the sap of trees and water in a pond are the same." For peace sake, we allowed him to remain master of his opinions. It is many years since, so we are not surprised at untenable notions now.

ON THE GLANDS OF CASSIA & ACACIA.

BY THOMAS MEEHAN.

Read before the Salem meeting of the American Association for the Advancement of Science.

Dr. Asa Gray, in his Manual of Botany, describes the glands of *Cassia marilandica*, as being towards the base of the petiole. This is true only of the upper leaves; the lower ones have the glands varying in position from near the base up to the lowest pair of pinnæ. It is clear from this varying position of the gland, that it is not a normal part of that individual leaf structure. If it were, it would be always in the same position relatively with other parts; it is fair to assume that it is locally an accident. An examination of two allies, *Gleditschia* and *Gymnocladus*, will afford the clue to their real nature.

Of course all know that the spine in *Gleditschia*, is an abortive or stunted shoot; and that the true shoot springs when it grows at all, from the bud below. There are therefore two axial buds in this plant, the one above the other. I have discovered that a similar system of buds exist in *Gymnocladus*, only that there are often three in one line, one above another, instead of only two as in Gleditschia. These buds rarely push forth into shoots, and hence as you know its name Gymnocladus has been given to it from its naked main branches. It is now worthy to note that the upper bud, the one farther removed from the axis, is the largest and best developed,

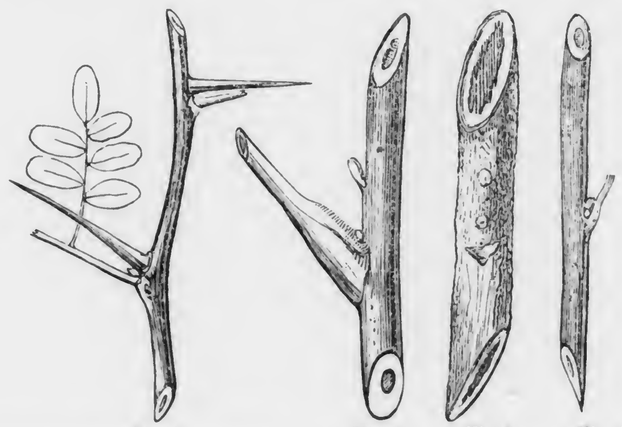


Fig. 1. 1 Gleditschia tricanthos. *Fig.* 2. 2. Juglans cinerea. *Fig* 3. 3. Gymnocladus canadensis. *Fig.* 4. 4. Itea virginica.

and that when a shoot does come, it proceeds from it; also that one or two of the lowest buds are very often below the centre of the axis of the petiole. Turning now to *Gleditschia*, we find that in its two buds, it is the lowest, or what in the other case would be the weakest, which in this instance makes the shoot. It is the upper bud which makes the spine, and I suppose has the least developed vitality. Thus we see in these allied plants there is no fixed system in the order of axial development; sometimes it is the upper bud, sometimes the lower which first pushes into growth. We also see by the failure of the upper bud in *Gleditschia* to elongate, by its degradation to a mere spine, that there is a tendency in all these axial parts to become assimilated into each other.

Turning now to *Cassia marilandica* and *Acacia julibrissin*, we find that its normal system is to have two buds, one above another as in the other two, and that the lower bud is nearly opposite the centre of the leaf petiole as before mentioned in *Gymnocladus*, and further, that in its early attempts at development, it has been absorbed in the tissue of the petiole, and borne along with it to a certain extent, and finally become an unwilling part of the leaf stalk.

Trifling as this observation of successive series of buds one above another in *Gymnocladus* may seem to be, it may have a very important bearing on our knowledge of the formation of buds. We have been taught that the leaf is the parent of the bud, and an axial bud and leaf are always associated. True physiologists have noted other buds proceeding from stems and roots; but they have made short work of this mystery, by at once deciding that there are two distinct species of buds, and they have termed these leafless affairs adventitious buds; but in the case of *Gymnocladus*, we see that of the three buds one above another,—and the upper one in strong shoots often an inch away from the lower one,—it is this one the farthest away from the leaf axis which is the strongest. If the leaf exerted any influence, the bud nearest to the leaf axis should derive the most benefit,—and further we see in Cassia, that instead of the leaf aiding in the development of the bud, it is the direct agent in arresting its growth, and is no doubt also the agent in causing the lower buds of *Gymnocladus* to be weaker than the upper ones

These series of buds have been singularly overlooked by botanical observers, and therefore the unmistakable voice in which they speak to us has remained unheard. We find them in other plants of very different families. Particularly do they exist in the most vigorous forms of Carya, in Juglans, amongst the *Corylaceæ*; and in Ericaceous plants we find them in *Itea virginica*, in which the upper bud the farthest away from the leaf axis is very fully developed.

Gentlemen, I hesitate about offering theories so revolutionary as my observations seem occasionally to tend. I hope you will not dwell so much on my explanations of the facts, as on the facts themselves. Examine them, and possibly a much better theory than my own may be evolved. I chiefly desire to call attention to facts which seem to have been overlooked.

THE ABIES CEPHALONICA.

BY CHRONICLER.

Mr. Josiah Hoopes, (the nurseryman of West Chester, Pa.,) in his very scientific book upon evergreen trees and shrubbery, states: "One of the finest specimens we have ever seen, is in the collection at Wodenethe, on the Hudson River; we judge its height is 20 feet, others are 10 and 12 feet high." Mr. David Landreth the extensive garden seed grower of Philadelphia, has upon his pleasure grounds at Bloomsdale, near Bristol, Pa., an Abies Cephalonica over thirty feet high, and the branches spread twenty-five feet in diameter; and is the most massy and closely grown fir tree we have ever seen. Perhaps the scientific pruning which Mr. Landreth practises every year upon his evergreen trees, may have given its close and massy growth and charming form. The whole tree is a mass of deep green shining foliage, with silvery underlinings; the branches point upward, and each tier forms a wide basin. The species is one of the handsomest of our hardy evergreen trees, and should be in every collection. The one at Bloomsdale has never lost a twig nor a leaf by summer heat or winter drouth; and not an inch of its wood is seen for the thick mass of foliage.

[We have seen this beautiful tree referred to by Chronicler, and have no doubt it is the most beautiful specimen of this species in the Union. —Ed.]

EDITORIAL.

MR. STRONG'S PLANT HOUSES

Amongst the most agreeable and instructive reminiscences of the past season's travel, is a visit to the Side Hill plant houses of Mr. W. C. Strong, at Brighton, Near Boston. These have already been fully described in the *Gardener's Monthly*, but they were then but a proposed experiment; now they are an accomplished and successful fact.

It will be remembered that the leading principle in Mr. Strong's plan was to take advantage of the ascending principle of heat. As usually constructed, an immense amount of heat is wasted in hothouses. The air is no sooner warmed than it is forced up against the glass a few feet above it, cooled, and sent down to go over again the same process, at an "awful" cost on the coal bill. By building the houses across a side hill, and others *without back walls* parallel—a whole series one above another like a range of terraces—a succession of terraces, in fact with a single glass roof; the heat after doing duty in the lower house, passes into the one above, and so on through the whole series to the top. So much for the principle. In practice it is evident, sixty thousand square feet can be

heated at the cost usually necessary for six thousand; and what is more to the point, hot water in these houses is entirely unnecessary. The ascending power of heat being far superior to the conducting power of water when on a nearly level surface, heat can be conveyed by mere pipes to a distance in this way quite inconceivable by those who have not seen such a house in operation.

Mr. Peter Henderson has done immense service to the cause of commercial plant growing, by his pretty houses, which, whether new or not, would never have been so popular but for his excellent example; and now we have to inscribe on the roll of horticultural benefactors the name of Mr. Strong, whose great success with these side hill structures we predict will revolutionize the whole business of bouquet making and winter plant growing in less than twenty years.

THE ONE-SHIFT SYSTEM OF GROWING PLANTS.

When "we were young" the horticultural world was considerably agitated by a new notion that it was not necessary to continually repot plants. A little cutting just rooted could be put into a "bushel" pot. and as fine a specimen be grown as by the frequent changes then popular. The old school deemed this rank heresy, but the young fellows who took it in hand, proved their faith true by their works. They beat the old plant growers, and carried off with their productions, the leading prizes at the flower shows.

But a short quarter of a century has passed. Truth, they say shall live forever; but in such a little time this true theory has passed away. The new creed, so religiously venerated, is now no more; and even the strong champions of the doctrine have returned to their ancient idols, and are now found worshipping at the same shrine with the physiological heathens they once condemned. All alike practice now what the new lights endeavored to ridicule as the "pottering and fumbling system." The continual shifting of plants from one sized pot to another a little larger, as the former gets tolerably well filled with roots, is now admitted by all to be the best system of plant culture. The reason of the failure however, was not known then as we know it now; and it may save another school of florists, who are working the no-drainage theory, the mortification of a great failure, if we point out what was the one thing wanting in the "one shift system." We have said that for a time the large pot growers succeeded, but they were particularly careful of their drainage. A small pot inverted was usually put over the hole in the large pot, and broken pots put in up to the level of the small inverted. Then over this a layer of moss to keep the soil from working in among the drainage. But this was not all. The soil was used in lumps. The finer particles would be riddled out, and only the coarse left for use. In new Holland plants, which were generally grown in peat, only that of a fibrous texture would be used, and these usually cut into pieces half an inch square. Sometimes in addition to all this, small pieces of brick would be worked in through the mass; but with all this it was found that soil would often *sour*, because the water did not pass away fast enough, and with this evil the plants would deteriorate even under the care of the most skilled growers. In short the whole scheme failed through a deficiency of drainage.

The true theory of pot plant culture is this. Plants feed chiefly on the matters they take up with water from the soil. As fast as the moisture evaporates from the leaves, a new supply of moisture enters through the roots to take its place. If the soil in a pot does not get dry very fast, it is a sign that much water is not being taken up by the roots, and therefore, the nutritive powers of the plant are not properly in action. Something is wrong. The want of drainage often causes this wrong, and in this way: To have a healthy soil for healthy roots, the atmosphere must circulate freely through it. The more rapidly water passes through, the more rapidly air follows. Water is the pioneer. Its weight makes a vacuum which the air immediately fills. A soil therefore, which does not dry fast, contains no air, soon becomes "sour," and unfit for healthy plant action The roots become torpid, and the plant's whole system follows.

Porous flowers pots allow much water to pass through them. Plants with a free vigorous growth, and an abundance of roots in a moderately small pot will absorb most of the moisture which can be given to them. "Drainage" on them is labor lost; but in the majority of cases it will be found that it will be a long time before the hole in the bottom can be dispensed with, and where even this hole is likely to be useful in encouraging the water to pass rapidly away, it should be protected from the chance of choking by having pieces of broken pots put around it, and whatever other safeguard skill and experience may suggest.

PASSIFLORA TRIFASCIATA.

Since the days of *Cissus discolor*, we suppose no plant with variegated foliage attracted so much attention as the *Passiflora trifasciata*, exhibited by Mr. Robert Buist Sr., at the recent meeting of the Pennsylvania Horticultural Society, and a leaf of which we represent in the following engraving. The ground color of the leaf is a rosy carmine. The central or variegated portion has three shades, white, rose and carmine. We have not seen the flower, but suppose it will have also an interest with all others of the genus. It is a warm greenhouse plant,



and was first introduced from Brazil by M. Verschaffelt of Belgium.

DR. HOUGHTON'S ESSAY ON PEAR CULTURE.

One of the most valuable papers we have had the pleasure of publishing for some time, is the essay on Pear Culture before the Penna. Horticultural Society, by Dr. Houghton. We have under our Horticultural Society notices, given some of the objections made on the spot during the discussion, and doubtless others could be made; but not any of all this will operate against the paper, which we have no doubt will stir up more thought than any thing on fruit culture which has appeared for a long time.

There is no doubt but Dr. Houghton is correct when he says in substance that the public idea of Pear Culture and Profit has been an utter failure; that the knowledge and skill which has directed it to this day, is merely empirical, having no foundation in Science, and no success in practice to recommend it; and that we have the whole subject to begin anew, and the hard lesson to learn over again.

It must be pefectly clear to any reader of this valuable essay, that knowledge and skill as against "natural advantages" must henceforth play a much more important part in the future than in the past; and in this one fact alone, the paper will be more than worth any objection that the most critical may make against it.

SCRAPS AND QUERIES.

Mushrooms.—*J. A. D., Washington Co.*, no State, given, asks: "How to make a hot bed to grow Mushrooms."

[It is the easiest thing in the world for one who knows how to raise them,and yet simple as it is, it is one of the hardest things to teach to another. The main principle is that the *temperature of the air and that of the earth must be nearly the same* or they cannot be grown. There must also be a correspondence between the moisture in the atmosphere and that in the soil. The temperature required is between 55° and 65°, and the atmosphereric moisture just such that a piece of paper would never get quite dry, or yet so wet that one could not write on it with ink without its running too much. This is the best idea we can give of the conditions necessary. It requires *intellect* to comprehend the conditions, simple as they are; for we have never seen any one who never saw a mushroom bed, who could grow them from reading alone.

The best material for forming the bed, is the droppings of oat fed horses. These should be collected every day, and placed in a convenient shed close by the stable, kept dry, and turned over every few days to keep from heating too strongly. When as much as is required to make a bed has been collected, lay it about eighteen inches thick *in any place* where the above conditions can be secured. The "spawn" can be bought in the large seed stores. Break it in pieces the size of walnuts, place on the bed a foot apart, and then on this about an inch of any good garden earth, beaten firm. Water with water at the temperature above given, and nothing more is necessary in order to have plenty of mushrooms, *but to beware of any change in the conditions.*

There are many plans by which each can carry out these principles. When a boy, our "pocket money" came from the privilege of raising what mushrooms we could in an old cellar under a toolhouse. It succeeded admirably; and big fat fellows often sent us on our way to market rejoicing in our success. In France they roof over old stone quarries, and make them into caves, where they are grown by the acre, and almost all Europe and America supplied in canned mushrooms therefrom. When we get a little poorer at Editing, and must come at length to do something that will bring in a little money for a living, mushroom culture is one of the first things we shall attempt. We are often astonished that more is not done with it than is. "No bugs, worms,beetles, aphides, birds, heats, colds, rains, mildews or moulds" to contend with—nothing required but strong common sense on the one hand, and a pocket full of money returns on the other]

Hardy Pears.—*H. T., Arenzville, Ills.*,says: "If you would give a list of the very hardiest Pear trees, in extreme cold winters and good bearers, in the *Gardener's Monthly*, I think you would oblige a great many readers."

[So far as hardiness is concerned there is little difference between one variety and another. Many growers have given lists of some kinds which have proved "tender" with them; but as probably the next door neighbor finds the the same trees *the best he has*, the conclusion is self evident that it is circumstances and not constitution which makes the difference. Productiveness is another thing. In this class the best for your region will be perhaps Lawrence, Howell, Vicar of Winkfield, Bartlett, Beurre d'Anjou, Belle Lucrative, Clairgeau, Seckel, Sheldon, Des Nonnes, Urbaniste, Kingsessing—12 very free bearers.]

Magnolia Fuscata.—*Mrs. H. P., Pilot Knob, Mo.*, says:

"Please inform me through your *Gardener's Monthly* how to treat the "Magnolia fuscata" so as to induce it to bloom. I have one, (a small one it is true) but it seems to stand still, scarce showing a fresh leaf. What kind of soil does it need, and what should be its treatment generally."

[We have never known any difficulty in blooming this sweet flowered plant. All we should think necessary would be to keep it growing freely by good soil, and full exposure to the light and air while growing, so as to have the wood mature. It is likely the roots have been injured by overwatering sometime. Take it out and examine; and if so, wash clean, put it in new sweet garden earth, in a rather small, well drained pot until it gets a start again.]

Hybrid Grapes.—A friend says, in reference to our opinion that Moore's Challenge and Conqueror are not hybrids, "Mr. Moore has tried repeatedly to raise plants from seeds of these, but has never been able to get one hardy enough to stand through one year, which, we think, pretty good evidence of something else besides native origin." Very true,—there are a great many "something elses" which make things die besides "foreign origin." All the *Native Grapes* on Mr. Moore's place, except these Seedlings and Clinton, are the next things to dying, that is diseased. The fruit was all failing from rot and mildew, and certainly this was from "something else" than "foreign origin."

Besides, the inference is illogical, for if the parents are hardy—no matter whether hybrids or not—why should not the children be? It is a curious logical position to assume that the children of hardy parents must necessarily be tender. because one of the grand parents was not. Such reversions are *assumed*, (we do not believe in them) to occur occasionally in the animal world; but admitting this to be true, no one would claim it by wholesale as in this case—"*not one*," says our friend, lived.

Evergreen Seeds.—A correspondent asks:—The best time to sow Norway and Hemlock Spruce seed, and about the price of such seeds.

[They may be sown any time from September to March or April. The usual range of Norway Spruce seed is from $1 to $1.50 per pound, and Hemlock Spruce from $4 to $8, according to the scarcity or abundance of the crop, or the convenience of the season.

Locust seed is usually sown in the Spring.

Pyrus Japonica Hedge.—*J. D., New York City*, asks: "Would you advise to pick off the blossoms of the Pyrus Japonica, to give it a better growth in the Spring. How about mulching it, as the roots are almost on the surface?

[We do not think any material benefit would be gained by taking off the flowers of Pyrus Japonica,—a good top dressing of manure, call it a mulch, would be the very best thing to give it a strong growth in the Spring.]

Improving Lawns.—*J. D., New York City*: "How shall I improve my Lawn. Have used one of Swift's hand mowers this summer. It is full of weeds."

[If the Lawn is new,the continued use of the Lawn mower will destroy the strong weeds; al- the weaker growers get more encouragement. If the soil is poor, a top dressing of manure that is free from weeds, will help it. Let us know further particulars, and we shall with pleasure advise you.]

Diseased Oranges.—*R. M. S., Jersey City*, "Our oranges and lemons of which we set great store, have a yellow look. Is there any thing to make them look fresh and green as they did when we had them years ago? They are old favorites from associations, or we should not care so particularly about them. Perhaps I ought to

say that we keep them in a hall in the winter, with a little light, but safe from frost. Mr. S. thinks it is not light enough for them, and thus the color is pale; but I do not think they are much better in summer time when we stand them out in our back yard."

[They are yellow because sometime or another the roots have from some cause rotted away and they have never yet fully recovered. Your best plan will be to keep the earth about the roots as dry as possible for this winter, without actually allowing the leaves to curl, and next May cut the plants back considerably—stump them in, as the gardeners say, and plant them out in a rich piece of ground if you have such in your back yard, and take up and repot them the next winter. If you have no little garden in the back yard, you can after cutting back the plants, wash the roots out of the old soil, and plant in pots or tubs little larger than is necessary to hold the diminished roots, and after they have started to grow freely, repot again into larger ones. Be careful after this that the water does not stagnate in the pots or tubs, or the roots will again get injured, and the leaves get yellow again; afford every facility for the water getting away rapidly.]

ACER COLCHICUM RUBRUM.—*Mr. J. W. Wood, Washington Heights, N. Y.*, says: I think it is well once in a while to retrace our steps or to revert to our experiences in horticultural matters, to refresh our memories. This refreshing of memories is not only pleasant to us, but I presume it will be, or ought to be pleasant and refreshing to the younger members of our craft.

Acer colchicum rubrum, I purchased of the late Mr. Reid of the Elizabethtown Nurseries. I remarked to him and also to yourself when I saw a few plants of it in your nursery, what a valuable addition it would be to the list of our shade trees. But unfortunately a cloud has veiled the beauty of my dream regarding it. The original plant I had from Mr. Reid's, got struck with what I call fire blight,—whatever this may be. To my mind I have never seen any satisfactory explanation of it yet, any more than I have of the potato rot. My private impression is that it is analogous to the cholera in the human family.

But to resume, or retrace: the leading shoot of my maple was killed outright to within two feet of the base, and of course the shoots pushed vigorously from the base. I mentioned this to Mr. Baumann the landscape gardener, now at Rahway, N. J. He asked me for a few shoots to graft; I gave them to him; the rest I layered and got 6 or 7 good plants from them; but one-half of them have been attacked or suffered in the same way. Now the question is, is it reliable or worth while to put in a catalogue as a valuable addition to our shade tree list? What say you or your correspondents?

[If a man is liable to *cholera*, ought it to be a question whether "mankind is reliable?" or "a valuable addition to our list of animals?" We know of very few trees but are as liable to the attacks of parasites as children at school are to peculiar insects,—it is not the children or plants which are to blame, but the circumstances. The same parasite which attacks the Acer colchicum, attacks the Sugar Maple; indeed is an emigrant from the Sugar Maple, of which many hundreds are *totally destroyed* by it. We have seen the Red Colchican Maple occasionally diseased in the way described; but there are in this district many scores of fine trees, which the owners we know would not willingly part with, and which we could no more do without than without potatoes, sugar maples, pears or any other good thing liable to parasitic blight. Our friend has our best thanks however for calling attention to it, for this maple parasite has never before been noticed in our magazine, and it is necessary for friends to look out for, cut away, and burn the affected parts to keep it from spreading, wherever it does chance to appear.]

THE RAMIE PLANT AGAIN.—*B., Brooklyn, New York*, writes: "The remarks about this plant may be well, if understood that *everything is liable to be pushed to extremes*, and thus *some* may find no market; but there is *certainly* a *market* for more Ramie than has yet been offered. I was recently informed by the Hon. J. W. Gregory, that a company had been organized in New Orleans, by men who know how much of the material they can sell, to put two thousand acres under Ramie culture next year. This certainly looks like business."

We give this extract for what it may be worth. "B." gives us no other name; and we do not know who is "Hon. J. W. Gregory." With the memory of sundry "companies" before us, it does not follow that things "going to be done," get actually accomplished.

CEDAR SEED.—*B. H., Cincinnati, O.*—Red Cedar seed sown last spring did not come up last year. The seed must have been good, as I gathered it fresh from trees in New York State. Can you give a reason for my failure; a few other pines grew very well, and all sowed together. [Red Cedar and all the juniper family to which the Red Cedar belongs, take time to grow. They seldom come up till the second year. The plan with most seedsmen is to keep them in a box of earth with soil for a year —"rot heap," they familiarly say of the mass of soil and seed, and then sow the following spring. A few will come up the first year; but we know of no way of getting up a whole crop in short time.]

RED WILLOW.—Under this name Mr. J. C. Cary sends us from Nebraska, specimens, which prove to be from *Salix petiolaris*. We did not know it grew to be so large a tree as Mr. C. represents, and it must be worth culture for its ornamental character.

GLAZING WITHOUT PUTTY.—*S. R., Baltimore, Md.*—"I see accounts of glazing without putty. How is this done? [The best kind of glazing "without putty," is that wherein only putty is used for bedding in the glass, none being used for the outside. Putty is placed on the rabets and the glass pressed in so as to lay regularly on the putty as in the usual way; but what may squeeze through the edge of the glass, and side of the wood, is smoothed down to be level with the face of the glass. The wood above the glass is simply painted; this is found better than putty, in this, that it never cracks, and so water does not "drip" through.]

NEW ABUTILONS.—*C. K. P., Baltimore, Md*, says: "Enclosed I send you a few seedling Abutilons; they are of the Mesopotamicum crossed with the Striatum. Please inform me through the *Monthly* if they are worth propagating."

[These are beautiful hybrids, superior in beauty the *Mesopotamica*, and of a much more brilliant color than striatum. Certainly they are worth propagating. You have made a lucky hit. No. 7, is nearly as large as striatum with broad rich colored petals; No. 4, has long narrow petals, lighter in color than the others; No. 6, is also narrow and long, but of a deep reddish brown; No. 3, is very distinct in its long sharp calyx lobes, and would interest a botanist; but those we have named are the best florists flowers.

TREE PLANTING IN THE SOUTH.—*M. B., Dansville, Virginia.*—"Planting is usually recommended to be done before November. This is my first season here, and I should be glad of your opinion whether to plant now or in the spring for this latitude." When the advice is given to plant before November, that is understood of north of the Potomac and Cumberland rivers. South of that it may go on all through the winter. Indeed we do not know but in South Virginia and further down, December is the best month of all the year for planting.

IPOMEA TUBERCULATA.—Last May we received the following very kind note from Dr. Conrad of the Pennsylvania Hospital. "I send you a plant of what I believe to be Ipomea tuberculata, and which I think may prove a useful climber for out-door garden decoration. I raised it from seed received from Montevideo about seven years ago. These were not sown until two years ago, and as they did not flower the first summer, from its quinate leaves, I mistook it for Passion Flower; but last summer it flowered in the garden, and proved to be an Ipomea. It was planted against a south wall, and grew with great luxuriance, making shoots twenty or thirty feet long, and flowering from July until November. The flowers are solitary, on a large peduncle; of a bright glossy light purple, larger than the common Morning Glory, but not so large as I. Learii. It did not seed but was readily propagated from long running shoots from its base, which root (even when covered only by by damp leaves) at every joint.

Ipomea tuberculata is an old plant introduced into England in 1815 from the East Indies; but I am not aware that it has ever been grown in the open air, and suspect it to be rare as a greenhouse plant. Its beautiful fine parted leaves, and elegant flowers, with its vigorous growth will I think make it a fine addition to our summer climbing plants, and if you find it to succeed as well as I have, you may perhaps some day call attention to it in your *Gardener's Monthly*, to which I have been a subscriber from its start, and to which I am indebted for many pleasant hours and much valuable information I am not positive that this is Ipomea tuberculata, but it answers better to the description of that in De

Candolle's Prodromus than to any other, but not to the plate in the "Botanical Register," to which he refers. It is a little singular that De Candolle should refer both this plant and I. dasysperma to the same plate, No. 81 of the *Botanical Register*.

[It was planted out in the open ground on a fifteen feet trellis, and has been one of the most beautiful ornaments of the grounds. In bloom from August till frost. The flowers of a pale lilac. It is clearly Ipomea tuberculata.]

Work on Plants.—*A. B., Port Lavaca, Calhoun Co., Texas*, writes:—I am cultivating fruits, flowers and ornamental trees, &c., for sale, but am not an educated botanist, but take great pleasure in the study. I would like to get some work giving all the later discoveries in the botanical kingdom, describing the habitation, character, cultivation and propagation of the same. I have an old edition of "Loudon's Encyclopedia of Plants," which is very satisfactory, but does not embrace the later acquisitions. Is there a later edition than 1855, and can it be had in this country, and at what price? Or have we a better work, and who is the publisher, and what is the price?

[Supplements to *Loudon's Encyclopedia* are frequently published, and by asking for supplements since 1855 these could be had through any importing bookseller, or their agents in the country towns. There is also an excellent work pretty well down to modern times. "*The Treasury of Botany*," by Lindley and Moore. Not published in America; but like the other, could be obtained through importing booksellers.

Pronunciation of Name.—*K. B. C., St. Louis, Mo.* We believe Mr. Roezl pronounces his name as if written Retzel.

To Correspondents.—We have yet some inquiries unanswered, for which we beg a short indulgence from our correspondents. If any are not immediately replied to, it is never because they are unwelcome.]

BOOKS, CATALOGUES, &C.

Fruits and Fruit Trees of America. Revised by Charles Downing.

The year 1845 marked era in American horticulture. We had before that many works, good works, on American gardening; but the appearance at this point of "Fruits and Fruit Trees of America," by A. J. Downing, was an uncommon event in this, that it seemed at one bound to bring America up to the European standpoint; and beget for our horticulture an enthusiasm at home, and a respect abroad. Mr. Thompson, recently deceased, had already done a similar thing for England, through the Horticultural Society. His work was the great work of the age, and Mr. Downing's came just in time to divide the honors with the old country.

We all know how it grew. A new edition was called for soon after his lamented death; and the first revised one, by his brother Charles Downing, was nearly double the size of the original. Now we have the second revised edition, which is really a superb work of over 1000 pages, and is without doubt the finest complete work on fruits ever issued in any country.

"A man born on the banks of one of the noblest and most fruitful rivers in America, and whose best days have been spent in gardens and orchards, may be pardoned for talking about fruit trees," says the author of the first book; and in the same strain we may say that the brother of such a man, inspired by the same spirit; and aside from fraternal feelings, animated by the same love we all feel for our lost friend, may well be pardoned for leaving as much of the practical part of the work just as the original writer left it. We know that if his progressive mind had still been with us, he would have re-written the whole, and yet we would rather receive it as Mr. Charles Downing presents it—a tribute to the memory of its author, than the re-modeled work of another mind. Yet we have sufficient progress in the notes appended; not so sweeping a correction of old ideas, of course, as the work of Mr. Charles Downing's own pen on an entirely new work might produce; but yet enough to keep the facts up with the times.

In the classification however, Mr. C. Downing has departed from the original plan. The other editions divided apples into *qualities*, and then subdivided into *seasons*. These have been found so wanting in reliability, and those proposed by

every other author proving no better, every attempt at classification has been abandoned, and the simple alphabetical order adopted. We do not know that any other conclusion could be arrived at in our present state of knowledge, though we do not see that it is impossible, yet it is unfortunate that it should be so. There is now no hope that pomology—descriptive pomology,—will ever become a science; be anything more than a mere matter of memory, varying as memory does, not only with each individual, but in each individual as time grows on him. There are over two thousand apples described in the book; and a stranger wishing to become acquainted with it, has to make up his mind to look through two thousand chances of finding it, a task few will venture on. We think that the old system of seasons, imperfect as it was, still good in this respect, as it afforded a clue. Admitting that an apple which at the north is a winter, becomes an autumn fruit at the south; still most would know that the fruit came from the north, and be prepared to make an allowance accordingly; and yet perhaps the objection is a valid one, that rules which require so much mental allowances are as bad as none. We believe that the system we have often proposed in the *Gardener's Monthly* perfectly practicable, namely *classification by types*. But we have too many duties to attempt it, and cannot interest in it those who have less. The beauty of such a system would be that scores of men could be working the subject at the same time, and not conflict with each other,—each taking his own type and working up just as many botanists will work on one book, each taking up his own natural order for study. The true object of any system is to group together objects which are distinct, and yet similar to each other. We have no difficulty in associating in our mind a Monmouth Pippin with a Peck's Pleasant; a Lowell with a Porter; a Pennock with a Stark, and when like is brought together with like in a system of classification, there ought to be no difficulty *in describing in language so clear that no one can mistake*, wherein one differs from another one.

Well, this time may never come,—until it does, no one can do without *Fruits and Fruit trees of America*. It is indeed the only descriptive work we have which gives a description of *all* known fruits. It is published in style worthy of its distinguished authors, by John Wiley & Son, New York.

NEW AND RARE PLANTS.

Dipladenia (Echites) Boliviensis.—This distinct and beautiful stove plant may be best described as a very free flowering White Dipladenia. In habit it is very compact, producing an abundance of flowers in a much smaller state than almost any other species. The foliage is medium in size, of a light glossy green color.—The flowers are somewhat smaller than those of D. crassinoda, pure white, with a distinct yellow centre.

It forms a pleasing addition to the already popular Dipladenias.

Eranthemum aspersum.—A beautiful stove flowering shrub, introduced from the Solomon Islands by Mr. J. G. Veitch.

It has glabrous branches, ovate oblong leaves, forming a long leafy inflorescence of very slender long-tubed white flowers.

Each flower has an expanded bilabiate limb of five segments, four of which are dotted with purple, and the fifth heavily blotched with the same color, like the lip of an Orchid. It is of very easy growth, dwarf in habit, and an abundant bloomer.

It is figured in the "Botanical Magazine" for May, 1868.

Hedaroma (Darwinia) fimbriata.—This very distinct and beautiful greenhouse plant was introduced from the southwest of Australia.

In character it closely resembles the well-known Hedaroma Tulipifera, but is dwarfer, and blooms more freely in a small state.

The flowers are of medium size, bell-shaped, of a bright rosy color, and beautifully fringed round the outer edge. It is a decided addition to that useful and popular class of greenhouse or conservatory flowering plants.

Maranta (Calathea) tubispatha.—A beautiful stove plant, introduced from Western Tropical South America. The following description is taken from the "Botanical Magazine" of November, 1865, in which number it is figured:—"A very graceful species. Its habit and prettily blotched leaves cannot fail to render it a

valuable addition to our variegated stove plants."

The leaves are obovate, elliptical, shortly acuminate, from 8 to 12 inches in length, of a pale green color, with a row on each side of the midrib of a pair of oblong deep brown blotches—the striking contrast between the lively green groundwork of the leaf and the brown blotches rendering this plant at once distinct and elegant.

CROTON (CODIÆUM) AUCUBÆFOLIUM.—One of the most distinct of the many fine varieties of the Croton, found by Mr. J. G. Veitch in the South Sea Islands.

It forms a handsome compact growing shrub, with oblong acuminate leaves 6 to 8 inches long, by 2 to 3 in width, tapering at the base. The surface of the foliage is of a beautiful dark glossy green, thickly studded with yellow, or somewhat crimson blotches, the midrib and veins being slightly tinged with pink. Bearing a strong resemblance to the well-known Aucuba japonica of gardens, it takes its name from that popular plant.

CROTON (CODIÆUM) HILLIANUM.—Amongst the many Crotons introduced by Mr. J. G. Veitch from the South Sea Islands, none are likely to be more useful and generally appreciated than this fine variety.

It is probably the most compact and close growing kind of the whole collection, and this characteristic, added to its beautiful shining variegated foliage, renders it a fine ornamental plant and peculiarly adapted for filling vases or for table decoration.

The foliage is oblong sub-spathulate acuminate, from 6 to 7 inches in length, by 2 to 3 in width, the upper surface being shining purplish green, the midrib and veins bright crimson, and the under surface dull purple. It is remarkable for the reddish-yellow effect of its foliage.

NEW AND RARE FRUITS.

MAMMOTH CLUSTER RASPBERRY.—We have an article from Mr. Purdy, showing wherein this differs from kinds with which it has been confounded, which shall appear next month; in the meantime, it is but fair to say, that J. J. Thomas, T. C. Maxwell, E. W. Herendeen, J. B. Jones, and A. Merrill, of Geneva, well known names, say it is distinct from *Miami*. J. J. Thomas, in *Country Gentleman*, of Aug. 12th, says of a visit:

"The several visitors who were found on the grounds, including a number of prominent Geneva nurserymen, all gave the preference to the Mammoth Cluster, as the most desirable black cap they had examined. Growing along side the Miami and other sorts, it was obviously distinct from all. In size it rather exceeded any other, many of the berries measuring three fourths of an inch in diameter. The Miami measured not over five-eighths. The flavor of the Mammoth was generally regarded as superior to most others; while its more fleshy and less seedy character added to its value.

THE CAMPBELL APPLE is an accidental seedling that sprung up about fifteen years ago close to the wall of a brick house occupied by George W. Campbell, Esq., of Delaware, Ohio. The tree is a vigorous, strong grower; habit open spreading; limbs not crowded; shoots stout, rather blunt; foliage abundant, leaves rather large. It has borne a good crop regularly every year since it commenced bearing. Fruit quite uniform; size from medium to large, and hangs very finely to the tree. It is evidently a late keeper, but heretofore they have been "too good to keep" later than January.—*Iowa Homestead.*

NEW STRAWBERRIES.—Burlington Co., New Jersey, is claiming the honors among new Seedling Strawberries. Turner's Favorite, Turner's Queen, Turner's Nonsuch, Turner's Beauty and Turner's Prolific have been recently advertised. One, the Queen, received a special premium from the Pennsylvania Horticultural Society, June 16th, 1869.

MCLAREN'S PROLIFIC RASPBERRY is a new variety brought out in England, and not yet introduced here. It is said to be *two weeks* earlier than their earliest. The Fruit Committee of the London Horticultural Society says it is remarkable for the size of its berries, and for its fertility. The fruit is light red, and nearly globose.

INTELLIGENCE.

WESTERN HORTIUCLTURE.—Dr. E. S. Hull, without whom western horticulture would never occupy the high position it does now, has been added to the editorial staff of the *Prairie Farmer*.

GRAPES IN IOWA.—At a recent meeting of horticulturists at Greenwood, Iowa, whose proceedings are reported in the *Iowa Homestead*. The Martha, Hartford Prolific, Clinton and Concord, were all spoken highly of. Catawba had no friends.

THE WESTERN TRIUMPH BLACKBERRY.—The *Western Rural* says, in flavor is surpassed by nothing it knows of in the Blackberry list. Cultivated for ten years by John Masters, of Waukegan, Ills.

LARGE APPLES.—Mr. Godfrey Shipf, of Lawrenceville, has apples of the Fallawalder variety, the largest of which weighs 19 ounces. Mrs. Sophia Michener of Coventreville, sends one to the office of the Montgomery *Ledger*, that weighed 18¼ ounces. The North Eastern part of our country seems to be well supplied with fine apples this season.

GRAPES IN MICHIGAN.—A correspondent of *Michigan Farmer*, at Ada, says, The varieties that have done the best this season on the Grand River flats, and on the hills, are Delaware, Iona, Concord, Hartford, Anna, and a black grape called Early July.

APPLES ON PEAR TREES.—The following curious paragraph is floating around:

A branch of an apple tree, presented to the Buffalo Society of Natural Science recently by G. R. Wilson, shows, within the length of three inches, two fully developed and apparently distinct kinds of fruit; one an apple, the other a pear.

DURABILITY OF HONEY LOCUST.—A Missouri correspondent of the *Country Gentleman* says that Honey Locust, for posts, is about as durable as sassafras, not equal to black Walnut; one black walnut post is worth three or four of Honey Locust. He thinks that Honey Locust is much less durable in some localities than in others, not lasting half as long in Missouri as in Kentucky.

APPLES FOR MINNESOTA.—The *Minnesota Monthly* has some accounts from the State, by which we learn that the best varieties for that part of the world are Duchesse of Oldenburg, Red Astrachan, Early Harvest, Red Queen, Gravenstein, Hawthornden, Tallman Sweet, Golden Russett, Fameuse, Summer Pearmain, Limber Twig, Sops of Wine, Seek-no-further and Tammany.

DESTRUCTION OF INSECTS.—We have repeatedly urged that the only way to keep down insects, is to persistently fight them. The Vinelanders have adopted this plan in earnest, and have offered premiums for the greatest warriors. The following is the list in competition:

CURCULIOS.

C. B. Campbell	4,446	Mr. Burge.	780
D. P. Ames.	1,315	C. Coburn.	480
R. Ingraham.	955	C. A. Kinney.	292
P. Snyder.	800	A. N. Gage	121

A few other persons have brought in enough to make the total 9,289.

ROSEBUGS:

Dr. W. T. Young.	29,737	Mr. Burge.	10,711
J. C Parsons.	22,890	C. M. Goodrich.	8,580
E. W. Gray.	18,254	J. Ingram.	7,200
J McMahan.	13,227	R. Ingram.	7,006

The four highest numbers of each of the above lists have been awarded premiums.

MINNESOTA APPLES.—The Winona Republican, informs us that John Hart, of Rollingstone, has in his orchard the Early Harvest, Red Astrichan, Red June, Duchess of Oldenburg, and the King, and that they are all doing well. Very probably, but what suits Winona, in this matter will not, perhaps, be of moment to other parts of the State. The idea is this! What is applicable to Winona may not be applicable to other localities. We doubt with the exception of the Duchess, if we could raise any of the above list, in this vicinity.—*Farmer's* (Minn) *Union.*

THE CHANGE OF COLOR of the leaves in Autumn from green to red has been attributed to the effect of acid, and it was asserted that the green color could be restored by submitting the leaves to the action of an alkali. This hypothesis, however, was advanced without any basis of facts to support it, but the London *Athenæum* now asserts that the theory has been established by experiment. Autumn leaves placed under an exhausted receiver with vapor of ammonia, it is asserted, in nearly every instance lost the red color and renewed their green. In some leaves, such as the sassafras, the blackberry, and maple, the change was rapid, and could be watched by the eye, while others, particularly certain oaks, turned gradually brown, without showing any appearance of green.

HISTORY OF ORNAMENTAL LEAVED ZONALE PELARGONIUMS.—The Pelargoniums (which by some inexplicable perversity are better known as Geraniums) are mostly indigenous to the southern, while the true Geraniums are chiefly natives of the northern hemisphere. They are nearly all natives of the Cape of Good Hope; and Pelargonium zonale and inquinans, from which the ornamental-foliaged varieties have no doubt descended, appear to have been introduced into this country about the year 1710. It may not be possible to state the precise date when the first variegated variety of these plants appeared; but Sir Thomas More, Bart., in a work entitled "The Flower Garden Displayed," and dated 1734, mention the bringing into England from the Paris gardens of a variety, the leaves of which were edged with cream color, and which, he says, made a beautiful shrub amongst greenhouse plants. It is quite possible that this may have been the same variety which was afterwards known as Miller's Variegated Geranium. Previous to 1848 there were in cultivation two or three varieties of silver margined Pelargoniums, apparently allied to the Nosegay section, the best and most useful of them being Mangles' Variegated. With this exception they were of little merit, and when, during the year 1847 or 1848, Mr. Kinghorn originated the variety called Flower of the Day, the first broad-petaled variegated Pelargonium which had been produced, it created quite a sensation among horticulturists. The late Mr. Donald Beaton, in writing upon the subject, said he had been told that before long another variety would appear which would make him "claw his head"—one whose foliage would contain no less than three distinct colors. It is possible that this prediction may have referred to the variety afterwards known as Attraction, which was produced by the same raiser, and was introduced to the public some two years after the advent of Flower of the Day. This variety was, I think, the first of the silver tricolors or silver variegated zonals.

I will now refer to the golden variegated zonals or golden tricolors as some call them. Up to the year 1855, I think, no golden margined Pelargonium existed, with the exception of the well known Golden Chain, and possibly one or two inferior sorts. It is not known how, when, or where Golden Chain originated, but is probably a sport from P. inquinans. I have the authority of H. Turner, Esq., of Beech Hill, Bury St. Edmund's, for stating that a plant of this variety existed in the plant stoves of the Botanic Garden of that town as early as the year 1822, and the plant looked at that time sufficiently venerable to have induced the belief than it had seen the close of the last century.

To the late Mr. D. Beaton is due in a great measure the credit of bringing this ornamental Pelargonium into notice as a bedding plant, and this he did with excellent effect in the famous gardens at Shrubland Park as early as the year 1847 or 1848. From about this time until the year 1855 gardeners' professional and amateur, appeared to be quite satisfied (as they well might be) with the neat and ornamental foliaged Golden Chain for bedding out, and other decorative purposes in the flower garden, &c. It is just possible that this state of contentment might have lasted for some time longer, had not a certain restless individual," observing the great advances which had been made in the improvement of the silver-margined sorts (and to which improvement he had in some degree contributed), fancied that something similar might also be effected with the golden-margined variety. Accordingly, a cross was effected between Golden Chain and a heavily zoned green-leaved sort, which was known by the name of Cottage Maid. The two best of this batch of seedlings had the honor to be named Golden Tom Thumb, and Golden Cerise Unique. Again, employing the last named varieties, chiefly as pollen parents, and using a strong-growing zonale seedling, afterwards named Emperor of the French, as the seed-bearer, Gold Pheasant was produced; and a union between this variety and the Emperor of the French, produced the celebrated Mrs. Pollock, and also sunset. It will thus be seen that the work was, and will no doubt continue to be, progressive in its development.

It may be necessary to notice the advent of another race or section of ornamental-foliaged Pelargoniums, which are variously known as "bronze zonales," "bicolors," &c. They possibly owe their distinctive character to a similar cause to that which produced the variegated varieties, viz., abstraction (non-production) of chlorophyll, or green coloring matter, from their foliage, but in this case the abstraction affects the entire surface of the leaf, and does not, as in the case of the variegated varieties, apply to the margins only. Although these plants are but of comparatively recent introduction, there is nevertheless some degree of uncertainty as to their origin. One thing, however, respecting them is certain, viz., that they had no existence previous to the introduction of the golden variegated zonals. If a batch of seedlings be raised between green zonals and golden variegated zonals, a percentage of bronze zonals will usually be obtained; and if seeds be saved from the latter, without artificial impregnation having been resorted to, about one-half of the progeny will prove to be bronze zonals, and the remainder green zonals, there will most probably not be one variegated zonal amongst them.

It is difficult to conjecture what may be the future of these varieties or tribes of ornamental-foliaged Pelargoniums. Some people go so far as to say that they have already reached their extreme limits, and that little if any further advance can be expected. I am scarcely prepared to submit to this dictum, as I certainly believe that their still exists considerable space for improvement. As has already been exemplified in their case, nature evidently cannot be induced to take very wide strides as she pursues the path of improvement, but when fairly set in motion it is hard to say when or where she may be brought to a standstill. Moreover, in addition to the straight-forward march of improvement, which may still, I believe, be followed out with success, there are also probabilities of divergence from that path, in the form of sports or *lusus naturæ*, which may form the base or starting point of lines which may ultimately lead to new and desirable developments, distinct form, and possibly superior to existing varieties. Without indulging in expectations of advantages likely to be secured from contingencies which may not occur there is still, I repeat, abundance of room for progressive improvement in these interesting plants; and I earnestly beg to impress upon the raisers of them the necessity of resisting all inducements to introduce to the public, varieties which are found upon trial not to be superior to sorts already known.—MR. GREENE in *Gardener's Chronicle.*

HORTICULTURAL NOTICES.

AMERICAN POMOLOGICAL SOCIETY.

We give a condensed account of the proceedings as follows.

In the discussion on apples.

The *Fall Orange* was spoken well of for northern New York, and northern and central Pennsylvania,—*Edwards*, a good Virginia kind, ripens with Early Harvest. Mr. Gillingham of Vermont, Va., thought it his best early apple. The *Pilot* from Nelson Co., Va., was valued at Richmond; a winter apple. The *Westbrooke or Speckled*, already noticed in the *Monthly* was introduced by Mr. Blodgett from Warren Co., Pa., where it has been prized for thirty years. The *Early Congress*, was the best early apple Mr. Adams of Portland, Me., knew. In season middle of July. The *Pennock*, was decided to be distinct from the *Stark*. *Bachelor's Blush*, was not *Maiden's Blush*; Dr. Warder said Bachelors never blushed, and Mr. Hyde added that in Massachusetts neither Bachelors nor Maidens blushed. *Southern King* was a good apple of North Carolina. *Missouri Pippin* one of the best Kansas fruits; sometimes called *Park's Keeper*; looks like Ben Davis. *Grimes' Golden Pippin*, commended for quality and productiveness. *Parry White* of New Jersey, good market fruit of average quality. *Winter Queen*, *Fall Queen*, was the same as *Buckingham*, which originated in Buckingham Co., Va.—a variable fruit. The *Orange Apple* of New Jersey, was distinct from Lowell. The *Orange Sweet* of Maryland, was different to the New Jersey orange. The *Green* and *Yellow Newtown Pippin*, Dr. Housely thought not distinct. The *Wagner* of Illinois had several warm advocates, and gave rise to a discussion on root grafting. Many thought it as good as any other way. Moody of Lockport objected, a whole root was as good, but not pieces; but the President

suggested that this was crown grafting, and not what is usually understood by root grafting.

PEARS.

Clapp's Favorite, well recommended from many localities, must be gathered early or it will rot at the core. *Rutter*, praised by several Pennsylvanians. *Doyenne du Comice*, good in New York, but not with Wilder and Hyde of Mass. *Niles*, equal to Easter Beurre, but like that kind, must be healthy to ripen well *Wilmington*, commended by Mr. Barry. *Dana's Hovey*, good for standard. and general opinion good. *President*, a large yellow pear of healthy growth, but second quality. *Beurre Nantais*, no one responded for. *Rousselet de Meistre*, of not much value. *Assumption* and *Souvenir du Congress*, Mr. Wilder said promised well. *Selleck*, a Vermont pear no one knew much of. *Duchesse de Bordeaux*, will not grow on quince; first-rate on standard in Philadelphia; juicy and aromatic; does not grow so large in Massachusetts. *Emile d'Heyst*, Wilder, Hyde and Berckmans spoke in its favor. *Goodale*, healthy tree, September, gather early or will rot at the core. *Doyenne Boussock*, much praised, but one speaker in Pennsylvania had noticed a tendency to crack. *Josephine de Malines*, good on quince in New Jersey: not productive with Berckmans in Georgia, nor with Hovey; but one of the best at Rochester. *Quinnebag*, resembles Vicar of Winkfield, but not so good. *Baron de Mello*, highly praised by some, and much abused by others. *Consillier de la Cœur*, or *Duc d'Orleans*, of the Boussock class, promising, but some speakers seemed shy of it. *Beurre de Montgeron*, resembles, but is *not* Frederick of Wurtemburg, according to Hovey, and *is* according to Satterthwaite, who found it more profitable than Bartlett's or Seckels; others had not found them bear abundantly. *Royers'*, a seedling from Roxbury, Massachusetts, partaking of Washington and Louise Bonne de Jersey in quality, and promising well. Of *Hebe*, a North Carolina pear no one knew. *Edmonds*, must be gathered early. *General Totleben*, keeps all January, and good. *Styer*, a good growing variety. *Sarah* and *Newhall*, two Boston varieties promising well. *Kirtland*, only good when gathered very early. *Beurre Durand*, promised well with Mr. Wilder. *Mount Vernon*, first-rate when gathered early. *Bonner*, *Abercrombie* and *Cope's Pear*, all names for one thing; in Georgia, grows well, but not productive in Tennessee, a little better in Georgia. *Coit Pear*, an Illinois seedling, resembles old *Brown Beurre*; a good pear. *Cuen de France*, one of the best winter pears by Wilder and Hovey.

Souvenir de Esperen, Wilder says is a fine tree and fruit. *Mary* of Ohio, promises well as a summer pear in Philadelphia *British Queen*, an English kind, fruited by Houghton, astringent, but large and handsome. *Madam Treve*, *Louise Bonne de Printemps*, Little Margaret and *Supreme de Quimfer*, were favored by Wilder. *Brandywine*, one of the best pears in the list.

PEACHES.

Furness, good in Philadelphia. *Hale's Early*, rots generally east before maturity; in Georgia and Tennessee their best *Griffith*, fine, but a poor bearer in Georgia. Tennessee and District of Columbia; reproduces tolerably true from seed. *Forster's Seedling*, as good as Early Crawford in Massachusetts. *Golden Dwarf*, good as an ornamental bush. *Druid Hill*, discarded for better ones.

PLUMS.

The *Wild Goose* was the only one discussed; several spoke highly of it.

CHERRIES.

Early Richmond, profitable everywhere, though rotting a little in Illinois.

President Wilder, speaking of the "Red Jacket," said it succeeded well in Massashusetts; was very hardy, but not of the best class.

Dr. Sylvester, of New York, said that they had more money in the sweet cherry; they paid much better than the "Richmond."

Mr. Williams of New Jersey, had about twenty varieties, but deemed "Coe's Transparent" as the best dinner or plate cherry.

Mr. Frierson, of Tennessee, intimated that the cultivation of cherries in Tennessee was a total failure.

The President then suggested that each delegate should name one variety of cherry which was considered to be the best and most flourishing in the section where he resided. The names are as follows:

The President named "Downer's Late" for Massachasetts.

Mr. Saul named "Coe's Transparent" for Washington.

Mr. Lines named "Early Richmond" for Kansas.

Mr. Quinn named "Coe's Transparent" for New Jersey.

Mr. Frierson named "Coe's Transparent" for Tennessee.

Mr. Arnold named "Old Kentish" for Canada.

Mr. Nicholson named "Early Richmond" for Indiana.

Mr. Coit named "Coe's Transparent" for Connecticut.

Dr. Sylvester named "Coe's Transparent" for New York.

Mr. Downer named 'Coe's Transparent" for Kentucky.

Mr. Frierson named "Belle de Choisy" for Tennessee.

Mr. Wier named "Early Richmond" for Illinois.

STRAWBERRIES.

The President asked for Mr. Meehan's experience of the *Mexican Everbearing*. Meehan said it was distinct from any Alpine variety that he knew, so far as he had seen it in Detroit. It bore there abundantly, and promised to do so through the season, not high flavored, but with the usual delicious aroma of Alpines, which with the usual cream and sugar, made a luxurious feast. It was a good amateurs variety. Wier said it was only so good as Meehan saw it on account of the very wet season, which seemed to suit that variety. Warder said he confirmed all that Meehan had said, as he also had seen it. Elliott did the same—Capen of Boston also had seen it, and spoke in its praise. Fuller said he had plants from Mr. Whiting, and they proved identical in every respect with his old Red Alpine. Meehan said he thought he was familiar with the old Red Alpine, and supposed the others who had spoken also were. He thought it strange that one could see no difference where a score of others could. If one could see no difference between black and white, and a dozen others could, it was a misfortune but would not help the facts. Mr. Fuller said he would send plants of his old Red Alpine to any one, and they could plant the Mexican by its side, and see if he was not right.

Peake's Emperor, a seedling, resembled Agriculturist. *Lady of the Lake*, not highly commended. *Triumph of America*, Parry condemned as a poor bearer, and Andrews praised as a fine berry.

The other varieties of fruit were discussed in connection with a revision of the Society's catalogue, and took the shape of voting by stars on the varieties named as suited to different latitudes. We hear that the official reports are in a high state of forwardness, and doubtless will soon be issued from the press.

PENNA. HORTICULTURAL SOCIETY.

Dr. Houghton's Essay, see page 323.

After the reading of the essay, Dr. Houghton said he would like to hear from Mr. Meehan, and on further invitation from the President, he said: There was so much that interested him in the essay just read, that he could not find it accord with his heart to say much against the conclusions of the intelligent author, whose capacities for observing were of a high order. Indeed if the paper had been confined to facts he should certainly say nothing, for they were in exact accordance with his own experience; but he must certainly object to the deductions which the essayist had drawn from the facts. He fortunately had had experience in these very channel Islands of which the essayist had only read about, and of Pear culture in them, and it was true as he stated, that only the finest and best Pears came from espaliers, wall trained trees, or carefully tended pyramids, and that very fine fruit was the exception and not the rule from large standard trees; but he also knew from this same experience, and with one fine Pear garden in his mind while he spoke, that the best Pears, and the most regular bearing Pears were from walls and espaliers about which large beds of pot herbs and other permanent and light crops were raised, and the soil of which was never more than hoed or lightly forked to keep down weeds, and which were regularly manured by top dressing; while those trees which were in deep soil, cultivated close up with cabbages and potatoes or other things which required deep digging, and consequent destruction of the surface Pear roots, were the most unreliable of all; and if any required "protection from early spring frosts," it was just such as these, the low state of vitality of which, brought about as it was by this treatment, required such extra care, and then with but poor returns But on the healthy trees he had described, "spring frosts" had no effect. Crassannes, Marie Louises, Chaumontelles, Gansell's and Autumn Bergamottes, Passe Colmars and that class of old standard fruits bore freely and well every year, and no such protection was ever given to them. The careful pruning and training which they received however was in their favor. The "let alone system," which standard Pears receive, resulted in the branches starving one another. On walls or espaliers this was so managed that the branches were of almost equal strength all over the trees; near the ground as at the apex of the branches, all alike bore good

fruit. In this particular, Dr. Houghton is certainly right. But as to the value of a system which encourages surface roots against one which destroys them, it was exactly in this same Channel Island, and while watching the results on pears and apples that he early in life learned the lesson. Apples and pears in rich cultivated vegetable gardens, have long ago gone the way of all flesh; while others in regular orchards and pastures are alive and productive to this day. That good English Pears were scarce in Covent Garden and elsewhere in England, is also true; truer even than Dr. Houghton has stated it, and the reason is that the cultivators there are like our essayist, blind devotees of surface digging, of an idea derived from probably some mythological god, which had traditionally handed down the dogma to "dig among the roots of trees to let in the heat and air," and which was religiously venerated as most mouldy sayings were if only old enough to have no one known to father them. One would suppose by the eagerness of Dr. Houghton to attack and ridicule those who suggested improvements on these antiquated relics of a long past age, that the one he defended was a grand success. Yet his whole essay was a complete jeremiade of failures; sobs and cries seemed to break out from every sentence; everything has been done but no fruit follows. His great divinity Baxter, he says, had no fruit of any consequence, but what we saw on our exhibition tables; and he quotes many similar cases, and we know that even the last great prophet of a Pear root destroying system, Patrick Quinn, has ingenuously recorded his own failures, except with a very few varieties. Where are any of these celebrated Pear orchards grown on the system the Doctor recommends, that have proved a permanent success? One by one they have made their exit, and and some with no good odor behind them. Did not his hearers remember a celebrated exhibitor of Pears at a former Pomological meeting in Philadelphia, Dr. Boynton of Syracuse, who attributed much of his success to manuring with dog's dung? That orchard he believed had now "gone to the dogs," and yet the same system is persisted in and glorified. His ideas had been characterized as "Nebuchadnezzarian," because as one means towards encouraging surface roots, he had recommended the surface to be kept in short grass; but the system of his friend, in view of persistence amid so many failures and disastrous experiences, while he was still descending farther into the bottomless pit, and away from the heaven of success, might with more justice be called the *Luciferian*. He had indeed always a sort of respect for Milton's great hero; and he felt the same for his friend, who was so determined to fight on a similar line, even to the bitter end. One thing however is clear: Lucifer is still wandering around dissatisfied and unsuccessful to this day; while Nebuchadnezzar he believed came out all right at last.

He had rarely seen any one who appreciated the value of the facts he presented. For instance, the speaker, to night spoke of the drying effects of grass; he wanted all the dews and moist showers for his Pear roots, and not to support roots of grass. He did not know that the ground was moister and cooler as a rule, under a closely cut grass surface than under a clear surface exposed to the full rays of a hot summer sun. Yet this was the fact. He saw a friend present this evening, with whom he had tested this in one instance some years ago. A thermometer thrust a few inches under a grass sod was fifteen degrees lower than in clear ground but a short distance from it. If grass was so grown that it took from trees moisture which they required, it was not a system which he advocated. The attempt to lay the blame of a defective system of culture in "early frosts," would not hold. His place was not more than four miles in a direct line from Dr. Houghton's, and on this ground were many trees which had been there for generations; "early frosts" never hurt these blossoms. There had never been a year in the past fifteen years that he had not had full average crops of Pears. They were of various kinds of Rousselets, Early and Late Catharine, St. Germain, Seckel, and other local varieties; what had he done that the frost should leave him every year to go four miles away to smite Dr. Houghton? Not only his trees, but there were hundreds of other such trees in Germantown and all through the State. The traveller could see them everywhere, if not always in grass, at least under circumstances the reverse of the root cutting system—or no system—for it is yearly changing—recommended here. So well known were these facts, that in view of them the Fruit Grower's Society of Pennsylvania had some years ago voted that the pear was the most certain crop of all fruits in Pennsylvania *to bear*, though they thought not the most profitable for market. Why should the "early frost"

let all these trees alone and tantalize the Doctor? He doubted whether six degrees of frost ever co-existed with open Pear blossoms in one case in a thousand, or once in twenty years. The essayist could not account for the great success of Pear culture in cities, as compared with others outside. He thought if the Luciferean system afforded no clue, the Nebuchadnezzarian might. The trees in cities were not often dug deeply around as the Luciferean demanded. Those who had a few pears in small yards, had nothing else, and attempted nothing else. The roots were rarely dug about, and the many little scraps of food, soap water, and so forth soaking through the bricks, made the very best conditions of food,—while the brick walks around the house and through the gardens afforded the very best kind of "grass," under which the fibres were always cool and always moist, and yet near to the vivifying influence of the atmosphere—the very best possible conditions for healthy vitality. As for leaves being gorged with watery sap, that was unphilosophical, and might do for those countries where physiology had stood still for fifty years; but here where we knew that there was little more sap taken into a plant's system, except to supply the immediate wants of evaporation, and that there was little evaporation going on in a moist time, and hence little root action, it would not do. He concluded by hoping the Doctor would amend his ways, and reap better results in the future than he had done in the past.

Mr. J. E. Mitchell remembered the thermometrical experiment referred to by Mr. Meehan, and that the difference in moisture and coolness was in favor of the ground under the sod. He was also satisfied from his own experience that standard Pear trees did better in grass. At first he had his Pear orchard on the regular garden plan: standard with dwarfs alternating; dwarfs did pretty well, but the standards did not, and he put the whole in grass. It had been much better for the standards, but it was death to the dwarfs: He was prepared to go a little way in favor of grass for standard Pears, but for dwarfs it would not do at all.

Mr. Meehan said Mr. Mitchell had good reason to congratulate himself on the death of his dwarf Pears. If he had kept on with the rooting system, with no more fruit to show for it than the present advocates of that system had, it was certainly "Pear growing for profit" to have them die at once, than to have so many years of pruning, pinching, plowing, fertilizing, dog dirting and what not, and get no returns but simply trees with leaves on for this great labor. He congratulated his friend on the death of his trees.

Dr. Houghton rose to make some further remarks; but at this stage of a discussion which promised much interest to the audience, our reporter discovered that he had "to make his train." If Dr. Houghton will please furnish us with a copy of his further remarks, we will publish them with great pleasure.

HORTICULTURE AT PENNA. STATE FAIR AT HARRISBURG.

There has been a grand floral display here in connection with the Penna. Agricultural State Fair. One of those fairy scenes of enchantment that we often dream of and sometimes, though rarely, meet with. In the centre of the tent a large fountain had been erected, on each side of which were two tables containing rustic work, dinner table designs filled with cut flowers, bouquets and the rarest of plants. Over and above these tables, hung baskets filled with rare ferns and curious trailing plants, and cages containing gay colored canaries, who mingled their merry din with the spray of the fountain and the confused murmuring of the thousands of people who visited this department of the fair. Such a display has seldom been equalled—never excelled.

The principal exhibitors were Messrs Graham near Asylum Gate, Kepple City floral garden, Crucknell, Fair Hill Nurseries; and F. O. Keeffe, private gardener to J. D. Cameron, of Lochiel. There was also a small collection of well grown window plants, shown by Mrs Shaffer, chiefly Fuchsias and Geraniums. A vase filled with Sedum Seiboldii was very attractive in this collection.

Mr. Graham has a general assortment of nursery plants, a plant of Abutilon Mesapotamica trained in the shape of an inverted sugar loaf, was very neatly done. A large plant of Geranium "*Glorie de Corbanay*" covered with a profusion of large trusses of salmon colored flowers was worth going a day's journey to see.

F. O. Keeffe's collection consisted chiefly of tropical foliaged plants, pans of Lycopods trailing to the ground. Several species of Fern and and a small case of costly plants, in the midst of which grew a small specimen of that vegetable oddity Alocasia Metallica. In this collection very few plants were in flower. Variegated

leaved and foliaged plants make an imposing display, but a few common plants in flower interspersed among them, would add much to the effect and relieve the sombre monotony of the display.

Passing over to the left of the entrance, we come to the collection of Mr. J. Schmidt, foreman of Mr. Kepple's garden. There are a fine lot of Asters in bloom from the tiniest dwarf, six inches in height, to the more stately ones of larger growth. A collection of Tuberoses with immense heads of large double white flowers reflect great credit on the grower and show that he understands the art of bringing to perfection this the sweetest of all Autumn flowers. A new plant, the *Lobelia Theodoria*, a stand of new Cannas, a collection of Cacti, a stand of Geraniums in a mass of bloom, fine specimens of that rare old favorite climber *Cissus discolor*, Fuchias, China pinks, and roses all in one mass of bloom, attest that no expense is spared to make this establishment a success. Most prominent among the roses was that grand yellow seedling of Pradels, "Marechal Niel." From the time of its first appearance, I formed a decidedly favorable opinion of this rose. My own experience, added to the glowing reports received of it wherever exhibited, strengthens my belief that this is destined to become the most popular rose in the world.

Next to Mr. Kepple's is a large and varied collection, exhibited by C. Crucknell, foreman of Fair Hill Nurseries. The Geraniums in this collection received the first premium and are deserving of a detailed notice. *Dr. Newham*, a bright cherry scarlet, with fine foliage is a valuable addition to the long list of Geraniums; *Cardinal Wiseman*, an intensely brilliant scarlet excellent for winter use; *Lord Byron*, nosegay, peach color, a good companion to Lord Palmerston; *Chas. Reut, President Lincoln, Corsair, Lucius, Dr. Lindley, Rebecca*, and *Gen Grant* all of the scarlet order yet all very distinct; *Beauty de Suresne*, rosy pink, old, but hard to beat; *Le Grand*, the grandest of the dark varieties; *Mad. Vaucher*, white; *Tom Thumb, White Perfection*, all good whites, but completely cast in the shade by La Dame Blanche, which is by far the best of all the whites grown. Among the variegated foliaged varieties were *Mrs. Pollock, Dr. Newham, Perfection, Golden Fleece, Victoria, Brilliantissima* and *Commander-in-Chief*; Amy Hogg on account of its beautiful magenta colored flowers and strong habit, is destined to become a great favorite. The Carnations were were fine and also received the first premium. Among them I noticed as superior, Mons. Mion, buff, pink stripes; Unique, an immense white, far ahead of Flatbush and that class; Defiance, Geant and that old but beautiful ruby colored carnation La Purite. Mr. C. had also several hanging baskets and cages of English canaries which gave a charm to this department. Mr. Schmidt also had some very pretty rustic baskets on exhibition. The two last named exhibitors filled one half of the large double poled tent and filled it well, so the committee thought before they awarded the main body of the premiums to these two collections. There is no doubt the success of the fair is in a great measure due to prodigal display of rich flowers here exhibited.

The first premium for best bridal bouquet was awarded to J. Schmidt, second to C. Crucknell. First premium for best pair of hand bouquets, not more than six inches in diameter to C. Crucknell, second to J. Schmidt. For dinner table designs, first premium to R. Graham.

The display of fruits in the Fruit Tent was extra fine, especially the display by the Cumberland Co. Horticultural Society. The Pleasant Valley Wine Co. of New York State, exhibited some fine Grapes and wine. The Iona, Concord, Delaware and some of the Rogers' Hybrids looked very tempting. The display of vegetables was also very full, the Pumpkins particularly so; for those who love the big things of the earth, this was the place to see them. E. O. Judson had a curiosity in corn, stalks not more than five feet in height, had from ten to fourteen ears of corn on. It is said to yield 200 bushels of corn to the acre. If this be the case it will be very valuable to the stock feeder.

Swift.

KENTUCKY HORTICULTURAL SOC'TY.

Lawrence Young, one of our best known and esteemed Horticulturists before the war, but who has not contributed much to our periodical literature outside his own state of late, has been elected President of the Kentucky Horticultural Society. Mr. Kennedy, who has given general satisfaction, has resigned.

THE EASTERN OHIO AND WEST VIRGINIA HORTICULTURAL SOCIETY,

Is a new organization, with head-quarters at Wheeling, and, we are pleased to hear, with good prospect of success.



"CORNELL'S FANCY"

"Engraved expressly for the Gardeners Monthly."

COLOR PHOTO

The Gardener's Monthly.

DEVOTED TO

Horticulture, Arboriculture, Botany and Rural Affairs

EDITED BY THOMAS MEEHAN.

Old Series, Vol. XI. *DECEMBER, 1869.* *New Series, Vol. II. No.* 12.

HINTS FOR DECEMBER.

FLOWER GARDEN AND PLEASURE GROUND.

We do not know that any more suggestive theme could present itself at this season, than the thinning out of trees and shrubs. In planting new places, it is impossible to follow the advice of our best masters in Landscape Gardening. and plant only with a view to the future. It is well to imagine that we in planting are forming a picture for posterity to admire ; but in our mere matter of fact, perhaps selfish time, people will want something to enjoy themselves, and *now*. Hence places will be set so thickly with trees to have a pleasant present look ; and things will be put near roads, close, and indifferent to the clearly foreseen verdict of posterity, that they are "entirely too near." Now as none of us expect to die soon, but all expect to enjoy in some degree in the future the works of our hands, why not keep both the present and future in view, so as to reap some enjoyment from both ? This is to be done by planting many more than we intend permanently to remain, and then cutting away annually those which we feel we can spare. This annual thinning and pruning in time becomes a very pleasant winter occupation. Nothing charms so much as variety ; and by the axe and pruning knife, employed in this way, we have really a new place every year. It is hard at first to make up our mind to cut away handsome trees, that have taken so long to grow—the plantings of our own hands ; but this nerve must be acquired, and it is surprising how after this victory over affection has been once achieved, how strong we feel for the good work. Sometimes we can leave trees remain longer than we might in places where they will be objectionable in time, by cutting back and trimming in. By the exercise of some judgment in cutting far back, out of sight, the strong shoots and leaving the twiggy ones to cover up the stumps left in pruning, the natural form of the tree is pretty well saved, and it may thus be preserved for years in a tolerably dwarf condition. In these cases, whether of deciduous trees or evergreens, the central or leading shoots particularly are the ones to be cut back, otherwise they will only grow stronger in proportion as the others are pruned, and really defeat the object in view.

Sometimes there is more anxiety about trimming and thinning out than necessary. Plants often group well together. Their branches interlacing. form a picture to be obtained in no other way. Friends are often troubled that one tree is spoiling the other,—no matter. The group is the charm. Some friends have no other idea than the beauty of single trees. Certainly they often afford the highest types of beauty. A grand old oak or chestnut with a century of life, its branches reaching far towards the horizon, and its bending branching, rivalling the cathedral arches of man, cannot possibly be excelled in emotional power ; but on the other hand, the rich effects of massing can be as readily appreciated by the lovers of the beautiful.

This weakness for trees—grown up trees,—is a foe to the highest art. In choosing a site for building it is a great chance if a piece of wood is not selected in preference to an open plain ; and yet it is almost impossible to make anything a[illegible]stic out of natural trees. It is very nice to have such a grove, for special purposes ; but the great pleasure which true art gives, can never be realized from such materials. The single idea of *shade* usually decides this. It seems an age to wait to see "small trees grow." Few can realize how fast trees come forward in a deep and rich soil. Even in a deep soil only—soil loosened up two feet deep, and several feet



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INTENTIONAL SECOND EXPOSURE

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This weakness for trees—grown up trees,—is a foe to the highest art. In choosing a site for building it is a great chance if a piece of wood is not selected in preference to an open plain; and yet it is almost impossible to make anything artistic out of natural trees. It is very nice to have such a grove, for special purposes; but the great pleasure which true art gives, can never be realized from such materials. The single idea of *shade* usually decides this. It seems an age to wait to see "small trees grow." Few can realize how fast trees come forward in a deep and rich soil. Even in a deep soil only—soil loosened up two feet deep, and several feet

wide, will in ten years give trees twenty feet high, though they may have been but four or five feet at planting. Oaks even, usually esteemed so slow, will reach fully this in a deeply loosened soil, even though not a particle of manure be used. Indeed, when we see some of the work of our own hand with these very oaks, we wonder how the idea originated that oaks grow slow. Certainly oaks with a fair chance will beat horse chestnuts, Kentucky coffees, or some other trees.

Many kinds of trees that do not seem to thrive well, will be greatly improved next year by having a surface-dressing of manure or rich soil thrown about them. Evergreens are no exception. A singular notion used to prevail, that manure of any kind was injurious to evergreens, probably through noticing that they were usually found in poor, barren soil. Our best American coniferæ growers, however, have long practiced manuring them, and with the best results. Guano has been found particularly beneficial to the Spruce family, and it will probably be found as good for the whole family of evergreens.

Soil for flowers may also be looked up during the winter season. Very few understand that an occasional change of soil is very beneficial to flowers in beds, though all know how important it is to flowers in pots. There is nothing better than surface soil from an old pasture, taken off about two inches deep, and thrown into a heap with about one-sixth part old hotbed dung to partially decay. In addition to this "staple" item, smaller quantity of different matters should be gathered together for peculiar cases, or particular plants. Peat, for instance, will be found very useful for many kinds of plants. This is not, as is often supposed, mere black sand; but a spongy, fibrous substance from the surface of bogs and boggy wastes. Sand should be collected sharp and clean; the washings from turnpike ditches are as good as any thing. Leafmould is best got already well decayed from the woods That one makes for himself from rotten leaves is seldom good for anything; it is always sour and seems "indigestible" to vegetation. A load or so of well-decayed cow-manure is a good thing for the gardener to have by him, as all those plants that dislike our hot summers, and want a cool soil to grow in, prefer it to any other manure. A small pile of hotbed manure is almost indispensable to the garden.

PLANTHOUSES.

The most interesting tribe of plants at this season of the year is undoubtedly the *Camellia*. The buds frequently drop off before flowering; this may spring from three causes—from the plants being kept too dry; or from the drainage being bad, whereby the soil becomes sodden; or from the house being kept too warm by insufficient ventilation. As the leaf buds burst, the plants are benefited by occasional syringings, and, indeed, an increased supply of water altogether, in order to accommodate the demand of the young growth.

Australian and Cape Plants are the chief ornaments of the greenhouse at this time. The *Acacia*, amongst the principal, will, like the Camellia, require more water while flowering; indeed, most plants which produce flowers before they make a new growth, require more water as they flower. On the other hand, most plants which flower on the young wood at or near the completion of its growth, take less. The *Correa* is another beautiful tribe, but does not do well in most collections; it is generally grown in a peaty soil; we observed that where it seems to succeed well, the growers use a considerable portion of loam in their compost for it. This is consistent with our own experience, and we are inclined to the opinion that more loam should be used with the peat for hard-wooded plants than is generally done in this country. As soon as any Cape or hard-wooded plant has ceased to flower, it should be repotted, if it require it; many prefer waiting till the plants are placed in summer quarters before this is done, and some in the fall. We prefer before they commence to grow, whatever the season may be, as the roots being then in their most active state immediately penetrate the new soil, and before it becomes sour or sodden by frequent waterings, reap whatever advantages the air it contains when fresh may afford them. Some greenhouses are rendered very gay in February and March by having young plants of *Verbenas*, *Petunias*, and other bedding-out plants potted at this time into large pots, and encouraged to grow.

Hyacinths that have been out of doors, or in any reserve place for protection, may be brought in a few weeks before wanted; they should not have much heat, light or moisture for a few days, and then only gradually. *Carnations* and *Pinks* are much admired when grown in pots and flowered there early; they do not force well if much warmth be given, but the usual temperature of the greenhouse will bring them forward a month before they can be had out of doors; whenever the roots make their appearance through the bottom of the pots, they should be shifted into a size larger. They require very little water and love the light, and whatever manures are used to enrich the soil should be thoroughly rotten. The *Pansy*, on the other hand, delights in half-rotten, strawy manure and turfy loam. If a quantity of seedlings have been raised in the fall, they will require potting this month; they do not flower well here when the weather becomes warm; but when grown in pots and forwarded slightly by the aid of a cool frame, they do very well.

Cinerarias will be soon the chief attractions; the least frost kills them, yet they will not do well if kept in a high temperature. They love moisture, yet are very impatient of damp. No plant is more improved by the use of charcoal in potting than this. This plant bids fair to become more popular than ever, as supplying a very early spring want. The *Calceolaria* will require the same conditions as the Cineraria.

Pelargoniums become "drawn," spindly, and worthless, if they are not allowed to occupy the lighest and most airy part of the house. If fine specimens are desired, the shoots should now be tied down to the surface of the pots and pinched off so as to induce them to shoot freely; but a too frequent use of the "finger and thumb"—nothing renders a Pelargonium weaker; rather encourage them them to *grow* bushy, by the free use of light, air and manure water. A good supply of young *Fuchsias* should be coming on now—repot as their roots fill each pot, let them not want for moisture or light, do not pinch off their tops, but let them grow rapidly. The temperature in which they are grown should not exceed 55°. A turfy loam, moderately enriched with well-decayed manure, and well drained with charcoal, suits them admirably. The *Mimulus* is receiving more attention than it has been; where they are grown they are much improved by having pans of water kept under their pots. *Oranges* and *lemons* will require the coolest part of the house, and to receive no more water than will just keep them fresh. *Epiphyllums*, as they continue to flower, will require the warmest end of the house, and a fair supply of moisture. *Cacti* and *succulent* plants generally, will scarcely require water at all, unless in very dry situations, and then receive but a slight sprinkling with a syringe. The rule, "when you water a plant at all, let it soak right through," does not by any means hold good with these plants, if there be not some other good exceptions.

VINERIES AND ORCHARD HOUSES.

At this season of the year, one of the most usual subjects of attention with many parties is the preparation of a vine border.

It was once supposed that, as the vine is well known to be a gross feeder, the border at its formation could not well be to rich, and consequently, when such an arrangement was in progress, all the dead horses, dogs, and animals that could be found for twenty miles round, brought very high premiums. But the practice has fallen into disrepute; not because it does not possess some merits, but because, like many other good things, it has been overdone.

Very much of the success of your vine border will depend on the vines themselves; a statement which will appear paradoxical to many, but it is a fact, that so long as the plant remains healthy, and the roots push actively and vigorously, the soil of a grape border can scarcely be too rich, and it is only when, from whatever cause the vine becomes unhealthy, and the roots diseased, that a highly nutritious border adds to the injury and makes the matter worse. Hence, the danger of too rich a border in the hands of the inexperienced, and the value of caution on the part of all in making a new experiment.

Keeping in view, therefore, that the first essential of successful grape culture, is the production of an abundance of roots, and their healthy preservation afterwards. The first great principles of subsoiling and draining must be sedulously attended to. If the subsoil is retentive, a drain, at least three feet in depth should be made all around the proposed border, and should be led with a good fall into the nearest outlet. A good warm subsoil is very important in grape culture, and drainage is one of the best ways of securing it, as when the rain can readily penetrate through into the subsoil, the warmth at the surface in the spring is carried rapidly down into the soil, and is very advantageous at the growing season. Too much attention can scarcely be given to this matter. The drains may in part be constructed of bones, which will serve the double purpose of affording nutriment, and warming the soil at the same time.

Where the soil lies naturally low, it is often ju-

diciously the practice to elevate the border considerably above the surrounding surface, which effects much the same purpose as deep draining accomplishes so successfully.

As to soil, where choice can be had, we think there is nothing preferable to the surface of a rasture field, taken off, say two or three inches deep, and to have with every three loads of it one load of stable manure, thoroughly decomposed—say two years old hotbed manure incorporated with it.—Any richer materials that may be at hand may be deposited at the outside of the borders. When the vines get older, and the roots strong and hungry, they will then find, and not despise whatever delicious morsels may thus be in store for them.

As to the width of the borders, we have always thought sixteen feet ample, and in cases where space was an object, we should be satisfied with much less; as, where the roots can be healthily maintained, good food can always be supplied.—Indeed, ideas are fast changing in this respect. We well remember the time when it was universal to throw away a pot vine after the fruit had been cut; but now, modern practice will produce good grapes several years in succession from vines in the same pots. This we saw especially well done by Mr. Harding, at Cleveland, Ohio. In time, however, the grape is liable to be weakened by the continual pruning necessary to keep it in a small space; and though it is clear vines will live many years and do well under this system, it is best where possible to have new vines occasionally.

It has come to be regarded by the best grape growers, that a good length of cane with plenty of room to develope growth, makes the best vines. Some indeed, go so far as to say that the best results have followed letting one vine have the whole house. We know, to be sure, that some growers have had excellent success with vines which have been severely cut back for half a century; but there are some good men who can always triumph over every obstacle, and then again there are some who are so well favored by other good circumstances that the vines do well in spite of bad treatment; in other respects altogether we think the "plenty of room men" have the best of it.

With regard to pruning the vine, it must not be forgotten, that what is done at this season is with the object of making the plant push with greater vigor next season, looking forward also to the future shape and form that such pruning will cause the vine to assume.

Many prefer to have always a good succession of young canes, as bearing wood. The old wood is cut away every year entirely to a new cane, which has been carefully trained up from the base during the summer, is now made to replace the old shoot; but this kind of pruning has to be attended to in the summer season more particularly, and need not be further referred to at this season, except to see that the cane is shortened down somewhat, according to its strength; usually being suffered to occupy about two-thirds of the rafter.

Those who prefer very large bunches, and who dislike to have their vineries crowded with 'wood' during the summer, usually train up a single cane to the rafter, which is ever after retained permanently there; and the side shoots, which spring out early and bear fruit, are annually shortened in to one eye at this season, and push again, and again bear the next.

There are many modifications of these two systems of training and pruning, all with various advantages and with their several champions, which those who aim at perfection would do well to study, and to which there are several interesting volumes specially devoted.

COMMUNICATIONS.

GRAPES—UNDER GLASS.

BY J. E. MITCHELL, ESQ., PHILAD'A.

Read before the Penna. Horticultural Society, Nov. 2, 1869.

The cultivation of the Vitis vinifera, or foreign grape, having been repeatedly tried here as an out-of-door grape, and failed,—its cultivation is now confined to glass structures or "Vineries."

The older books on this subject contain so many details, both as regards the construction of the house and the preparation of the border, together with the constant attention the vines require at all times during their growth, that the wonder is, that any other than a professional gardener will undertake their cultivation; and even with their knowledge, that the vines should survive the "hollow columns of brick rubbish"—the "paved inside borders"—the "outside concrete borders" filled with "carrion," and drenched with liquid manure—the opening and closing of ventilators and air ducts—the conflicting modes of pruning and thinning out, together with the "magnesia" bloom, when none is provided by nature. None of these are necessary, and the most of them are positively injurious to the health of the vine, which is so hardy in itself, that a crop of grapes can be relied on with as much certainty as a crop of cabbages, and with but little more attention to their cultivation,—provided only that the natural wants of the plant are attended to under the artificial conditions under which it is grown.

The first of these is the border, which should be outside the house, and well drained, and composed of any ordinary good soil, about eighteen inches deep by ten feet wide, and top dressed every fall with stable manure, and mulched in the spring with leaves or litter. No attention need be paid to the inside border, as vines planted there will only bear two or three small crops, and generally die out when five or six years old. The vines should be well grown and healthy stocks of one or two years from the bud; they should be planted along the front of the house (so that the roots can pass out,) and placed four feet apart.

They should be allowed to grow from one bud the first year, and then cut down to two or three buds; the uppermost one should be allowed to form a cane the next year, and the others spurred back to one bud each, and allowed to bear a bunch of grapes each; the new cane should be again cut back to two or three eyes and these spurred; this system being the simplest for the amateur. The side shoots should be allowed to grow from two to three feet long before stopping, and should remain two feet in length, stopping only the end lateral at one leaf and allowing the side laterals to grow after the first stopping, as the shade they furnish is necessary to the proper coloring of the fruit. One bunch only should be allowed to remain on each side shoot, and the one nearest the main stem is generally the best; the berries should be thinned out about one-half when they are the size of small peas. During the first three years the glass should be white-washed half way up the outside, with a mixture of rye flour and water (or lime wash.)

This will peel off during the winter, and should be renewed in the spring, until the foliage is sufficient to shade the fruit.

A cold vinery should be so placed as to admit of drainage for the border, but may face any direction, and may be a lean-to, or double pitch, of stone, brick, or wood; and of almost any shape, provided only that it has abundant top ventilation, and none whatever at the bottom. The cheaply built lean-to houses of rough boards at the back (white-washed), with 10x12 glass bedded (not glazed) into permanent rafters from 18 to 20 feet long—are the most satisfactory; and will ripen the foreign grapes just as perfectly as in the most costly structures. Such a house 40 feet long by 15 feet inside, and rafters of 18 feet long, will give the roof a pitch of about 34 degrees, and will grow 10 vines, which will give a moderate supply of grapes for an ordinary sized family in three or four years, and an abundance of fruit in five years. The ventilators may be wood shutters, hinged near the top of the back wall and opening outward; they should extend the whole length of the house, and the opening should be from 18 to 24 inches wide. No ventilation should be allowed at the front, as this is a prolific cause of mildew. The top ventilation may be left open all day, and only closed at night after watering the house, which should be done every evening so long as the ground inside looks dry. After the grapes are fully grown and colored, the outside border should be protected from heavy rains by hot-bed sash or shutters resting on the front of the house, which may be 3 feet

from the ground; this prevents any tendency of the berries to burst from an excess of moisture.

Flowers of sulphur should be placed on boards or slates in the house, or scattered on the floor as a preventive of mildew; closing the house at night and fumigating it with tobacco smoke will destroy the thrip if they should appear.

After pruning in the fall, the vines should be taken down from the rafters and laid along the front of the house, suspended clear of the ground and protected from the sun's rays with corn-fodder (or mats), which should be placed along the front of the house and in the rear of the vines so as to shade them effectually. They should remain in this position during the winter, and should not be tied up to the rafters in the spring until the buds have swelled evenly along the whole length of the cane.

The whole theory of the cultivation of the vine under glass, seems to be, to keep the leaves in a uniformly warm and moist atmosphere, thereby keeping the foliage healthy and protecting it from the sudden changes in our climate. There is nothing in what has been stated, which need deter the amateur from having a grapery built and attending to it himself; there is no rural occupation which will give him more satisfaction, as the results are not only a source of pleasure to himself and family, but to his friends, as no more acceptable present can be sent to such, and nothing more grateful can be given to a sick friend, than a dish of ripe clusters of cool refreshing grapes.

GRAFT HYBRIDS.

BY P. BARRY.

In your October number you make a notice of some "Sweet and Sour" Apples, said to have been produced by inoculating with a bud, composed of half a bud of R. I. Greening and half a bud of Talman's Sweeting.

I was present in the committee-room at Philadelphia when this subject was presented; and although I had full confidence in the good faith and veracity of the gentleman who made the statement, I could not believe it. I was forced to the conclusion that it was a mistake, like many others which have been made the ground work of theories. It seems to me that it must be a physiological impossibility to slit two buds and put a part of one and part of the other together as one, then insert that bud and have it produce a shoot which shall combine in its products the qualities of the two parents!

The *germ* of the bud after all the scaly covering has been removed, is a very small object, and the work of cutting these small germs so that they can be reunited, would be a delicate operation. If the germs are not cut the operation would be a failure, no matter whether the two parts of the bud would unite or not.

I have known the so called "sweet and sour" Greening for 30 years, and have it now growing in my garden. I found it as a sport on a Greening tree, only one branch producing this peculiar fruit. This variety has a tendency to produce such a sport, for I have known of its being found in several places.

Not long ago a gentleman brought me an apple which was striped longitudinally with alternate stripes of red and green of almost equal breadth and so regular and clearly defined, as to look as if it had been painted. It was a sport; all the fruit of one branch were alike, and totally different from the fruit of the other parts of the tree.

If we were told that the "sweet and sour" Greening had been produced by grafting the Greening on a sweet apple stock, we could believe it possible, in the way of the ordinary graft hybrids which are recorded. So might the striped apple have been produced by grafting a red apple on a green apple stock.

THE RELATIVE VIGOR AND HEALTH

of Serrate, Reniform and Globose leaved varieties of the Peach.

BY W. C. FLAGG.

Reading your remarks on the glands of the peach leaf, reminded me to day of an intention I had to write you further on the subject, after our conversation last July, which I now do.

As I was then telling you, it has been well known here for many years, that of the Serrate, Reniform and Globose varieties, the first is most tender and subject to certain diseases, and the last hardiest. As long ago as 1855, Dr. Hull said, in the meeting of the North-Western Fruit Growers' Association, at Burlington, Iowa, that "in all these serrated varieties the end of the shoots mildew, and we hold them in little esteem. James E Starr, in 1861, at the meeting of the Illinois State Horticultural Society, said, "some varieties are more hardy than others. The serrated peaches are not hardy. We use only the Early Tillotson among these."

Nor has tenderness of serrate varieties escaped notice elsewhere. Darwin, in his Variation of Animals and Plants under Domestication (vol. 1 p. 413), says: "according to Robertson the trees with glandular leaves are liable to blister, but not in any great degree to mildew; whilst the non-glandular trees are more subject to curl, to mildew and to the attack of aphides." And again (vol. II. p. 280): "the existence of minute glands on the leaves of peaches, nectarines and apricots, would not be esteemed by botanists as a character of the least importance, for they are present or absent in closely related varieties, descended from the same parent tree; yet there is good evidence that the absence of glands leads to mildew, which is highly injurious to these trees." Our fruit books all bear testimony in the description of nearly every serrate leaved peach of its faulty character, thus in Thomas' "Fruit Culturist," we find: *Early Anne*, "the tree at the North is very tender;" *Early Tillotson*, "leaves liable to mildew;" *Noblesse*, "tree of rather slow growth and liable to mildew."

But to come down to our own experience here in Illinois, I first give a classified list of the more important peaches of each of three classes we are considering. They stand thus:

Serrate,—Early Tillotson, Serrate Early York.

Reniform,—La Grange, Morris White, Bergen's Yellow, Columbia, Smock, Heath.

Globose,—Hale's Early, Large Early York, Late Red Rareripe, Oldmixon Free, Troth's Early, Ward's Late Free, Crawford's Early, Crawford's Late, Oldmixon Cling.

Of the serrate varieties, Early Tillotson is generally, though not altogether, discarded from the lists for market orchards. In common with the other serrate sorts it is affected with a mildew of the leaf and shoots, which in seasons favorable to the development of the mildew, causes it to shed its leaves prematurely, and prevents the proper ripening of its new wood. Neither can it carry out a severe check upon its growth. In 1867 my Early Tillotson trees had a heavy crop of fruit. Whilst Troth's Early, with nearly as much fruit, ripened it up well and kept on growing vigorously. The Early Tillotson seemed to be entirely unequal to its assumed task, and the peaches to almost wither as they ripened. The trees, without special attention, have looked weak and thriftless ever since. I am inclined to believe, however, that with annual shortening and special cultivation, and perhaps manuring, that this variety may still be found desirable, as the best succession yet found to the Hale's Early. There is some complaint of its rotting.

Serrate Early York is condemned still more strongly. It is one of the varieties very prone to rot in the fruit as well as mildew in the leaves,—in fact it was the worst of our popular varieties in that respect, until the Hale's Early appeared. But this however, appears to depend quite as much on other differences as on the distinctions between serrate and other sorts. Smoothness of skin or a watery texture, are quite as important predisposing conditions, in my opinion.

2nd. Reniform varieties seem less enduring of cold in the bud than the globose sorts and to rot more readily, but this is a rule with some striking exceptions. Thus the Heath Cling, with me seems quite hardy, and I hear the same report from several others, yet it has reniform glands. Crawford's Early, Crawford's Late and Yellow Rareripe, though they have globose glands, are quite tender in the bud. The reniform varieties also rot more; though here, too, we have some striking exceptions. Mildew on the fruit is one of their characteristics.

3rd. The globose sorts are the best; for among them only can we enumerate the varieties without fault—"*sans peur et sans reproche*"—such as George IV., Large Early York, Late Red Rareripe, Oldmixon Free and Stump the World.

Thomas enumerates 23 serrate, 47 reniform and 58 globose varieties as worthy of a special description. Looking over the last fruit list of the American Pomological Society, we find that of 57 varieties recommended, 30 or more are globose, about half that number reniform, and a scant half dozen serrate. The English, and I believe the European authorities generally, recommend a much larger proportion of serrate varieties. Lindley classifies 47 serrate, 54 reniform and 33 globose sorts. This indicates that serrate varieties are more successful than the globose in Europe. Though this may be owing to their being preferred for house or wall culture. How is it?

PLANT NEW STRAWBERRIES.

BY WALTER ELDER, PHILADELPHIA.

As there are many valuable new varieties of strawberries worthy of general culture for their thrifty growths, great productiveness and fruits of large sizes, and of superior flavors, of which the readers may learn in the advertising pages

of this paper,—the following simple mode will ensure success and a speedy increase of young plants; we have practiced it for many years without a single failure.

Set a cold frame in a sheltered spot facing south or southeast; the back ten inches higher than the front; spread rotted manure three inches thick upon the surface of the soil inside, then dig deep, mix well and break fine; if the soil is a heavy loam, spread an inch thick of sand over it after digging, and work it well in by deep hoeing and raking, smooth the surface and set the plants sixteen inches apart eachway, then give a good watering, and place a glass sash upon the frame and shade from sunshine. from 8 A. M. to 5 P. M., for three days, but take off the sash for all nights in August and September, to let the plants get the benefit of air and dew; after the third day, give an hour more sunshine in the mornings and afternoons until they get the whole, but the sash should be off in sunshiny days; give waterings when needed and let the plants get all the rain that falls, as no artificial waterings are so beneficial; stir the soil lightly with a hoe once a week. and pull out all weeds. When the nights get cool put the sash on. and take it off or partly off in daytime so as to encourage growth; bank up the outsides of frame with soil before winter sets in. and in very cold weather keep the sash close on and cover also with mats, shutters or straw, but in all mild days, give light and air by uncovering during the daytime, but make secure over night to guard against sudden changes to cold. Early in March begin to encourage growth by sunshine in days and covering over nights.

If the transplanting was in August or September, by middle of April there will be many young plants from the runners fit to set out in the open ground; let the main plants remain in the frames and keep warm, and they will give an early production of fruits, and their qualities will at once be known; after the fruits are ripe, remove the frame and let the plants grow as they choose, but keep free of weeds, and by August or September there will be plants enough to set out a large fruiting bed in the open garden. Purchasers may observe that from a dozen or half dozen plants of any new variety, will by the above mode have increased to hundreds and given a taste of their fruits all within one year. We think that August and September are the best months to transplant strawberries (apart from spring), to the northward it may be earlier, and southward a month later; we have transplanted in October and November, and by keeping the glass sash on all days and covering well over nights, the plants get well established and of large sizes before hard winter weather sets in.

As we have been paid with scorn heretofore, for informing readers of new choice products, discoveries and inventions, and where they could be got,—sellers in the future may let their wares be known through the advertising pages of the papers.

NEW FLOWERS.

BY E. MANNING, HARRISBURG, OHIO.

In looking over the *Monthly* of Dec., 1865, I find the following from the *Gardener's Weekly*: *Azalea Bouquet de Flore*—This hybrid Azalea is unquestionably a magnificent plant that will reign as queen among its compeers, of which none as yet known to us, are able to dispute its prominence. Its innumerable and brilliant tricolored flowers, in which white, bright rose and golden yellow combine their opposite yet harmonious tints, arranged in large bouquets, and its beautiful luxuriant foliage, the reticulated leaves are of a reddish brown, produce a charming effect among clumps of other Azaleas, or alone, or planted in groups. It thrives well in the open air. It was discovered among the many seedlings raised by our editor, who after having well tested its merits and qualities, now presents it to his subscribers.

Now, Mr Editor, I had the pleasure, or rather mortification, to have it in bloom in my own grounds last season; it is like the many new fancy articles sent out at fancy prices, under high sounding names.

Bouquet de Flore, or a Basket of Flowers, is a long shaped trumpet flower, much the shape of Bignonia radicans, but not quite so long; the color or variegation is too dim and inconspicuous with the long narrow opening of the front of the flowers, renders it instead of the best of the group, the very poorest of any Azalea that has as yet bloomed at this place,—it is not worthy of the company of any of its companions that has ever bloomed here.

The practice of sending out new fruits and flowers under high sounding names, and at high prices, is but too common in our own as well as others countries. When a man gets a new fruit or flower professing to surpass all its others competitors, pays a high price, and waits with anxiety and unremitting care the development of his favorite pet, and in the end is only mortified and chagrined for his pains and expense; he is apt to think his speculation is a poor one. Such a course as this, alas but to common in our country, is only calculated to discourage in many cases the introduction of new and valuable things. The writer of this, as well as others, has but too often been deceived in this way. Only some three or four years ago, I received grafts of a certain New-York man of an apple, purporting to be the earliest of all apples, to ripen fully by July 1st; I have increased my favorite pet by grafting, to some fifteen trees, and I had it in fruit the present season; it ripened its fruit the first week in September, only fourth rate at that; I shall have to re-graft the whole.

NOTES ON THE SEASON—FRUITS, &c.

BY A. HUIDEKOPER, MEADVILLE, PA.

One is apt to turn away from the theorising and the predictive philosophy which present themselves on the pages of our Horticultural Journals, to the report of some one who says, "I have tried this thing, and this is what came of it," as to something safer and more conclusive in the premises. Yet individual experiment is but a qualified guide in Horticulture, the result of it only being satisfactory under proper attendant circumstances, such as a fair average season, and proper care and skill on the part of the operator. "It will never do," said Mr. C., in my presence the other day, "to cut the entire top off a maple tree when you transplant it; a neighbor of mine tried it and the trees all failed to live." "Nay," rejoined Mr. R, who overheard the remark, "I saw another row of trees planted near the same locality and trimmed in the same way and yet they all lived."

Now it was evident that here something of soil, or season, or skill had made just the difference between failure and success. The value of a report then depends somewhat upon the extent of trial to which a variety of fruit has been subjected. The soil experimented upon, whether clay, gravel or loam, and locality, by which the reader may judge whether the season is likely to have been a long or a short one. If instead of the witticisms and personalities to which we are sometimes treated, the writers thereof would give more precise and accurate statement of facts, nurserymen would know better what to keep on hand, and amateurs what to plant with a reasonable hope of success.

With a view to this end, I report our past season here as rather an unusual one, marked by spring frosts of less than ordinary severity; by frequent rains during the months of May, June and July, when we rarely had three consecutive dry days; by great heat in August, and by tardy fall frosts. The first freezing hard enough to destroy the Dahlias, occuring on the night of October 20th, since when, we have had weather such as we usually get in December, the thermometer sinking at night to 19° 17° and 15° above zero, under glass. Three inches of snow falling last night (Oct 27th) on pastures as green as in June.

Fruits—Apple trees blossomed sparingly. Crop a small one, much injured by borer.

Strawberries—I grow these and all other fruits on a rich clay soil. After three years of trial, I reject as too unproductive:

The three Tribune varieties—and also *Russell's Prolific*. The Russell blossomed finely, but the few large berries produced were soft and hardly kept till picked. Newer varieties substituted for future experiment.

Currants—Worms bad last year, and worse this. After a long contest with the ever reappearing pest, bushes taken up and replaced with Black Cap Raspberries.

Pears—Belle Lucrative, Tyson and Louise Bonne de Jersey required much thinning of fruit. Latter, notwithstanding wet season, had saccharine elements well developed, and might be ranked as very good. No. 2 is one of the most reliable kinds for a crop.

Onondaga—Large and fair; quality good; better than usual.

Beurre d'Anjou—Large and fair; not yet tested.

Duchesse d'Angouleme—Large, fair, full crop; not high flavored.

Winter Nelis—A tree whose profuse flowering generally ends in two or three dozen of pears; produced this season about a bushel of fruit, some of the specimens measuring from nine to ten inches in circumference.

Glout Morceau—Which is usually a poor bearer, produced a fair crop.

The Pears which cracked some, were Steven's Genesee, White Doyenne and Henry IV.

The Doyenne formerly did well with me, but, on removing the tree to another part of the garden, it became affected as above.

The Genesee has always proved with me on a rich and well drained soil, a poor bearer,

and in the coming spring will be regrafted with something better.

Dwarf pears are doing much better with me during the last few years than formerly, I have no blight and the trees grow well. I think that many dwarf pears are ruined in our country by a fungus which dries up the bark, making it hard and unfit for the circulation of the sap. Longitudinal incisions in the bark in the early summer do good by the formation of new bark, and the trees will be greatly benefited by a pasty wash of wood ashes, which makes an alkaline wash strong enough to destroy the fungus, lichens, or whatever the enemy may be, without injury to the tree itself.

Grapes—I reject the *Golden Clinton or King*, which, with the advantage of a long season, has not properly ripened. *The Tokalon*, with its large clusters and berries, which came very nearly to maturity; and the Rebecca which ripened its fruit, but which here I deem not worth cultivating. The fruit being tough, with a sweet insipid May apple flavor, quite lacking in spirit. It must have a better character elsewhere, or we should not have had it spoken of as the "Chasselas of America."

The Delaware ripened fully this year, some clusters with me measuring four and four and a half inches long. The beauty and character of its fruit were all that has been claimed for it, which amid the free use of eulogistic adjectives in this age, is saying a good deal for it.

Creveling ripened its fruit and was moderately good.

Hartford Prolific looked spendidly on the vines, but as usual dropped off as soon as touched.

Franklin—This (misnamed) variety is said to be nearly barren at Philadelphia, and in New York Catalogues is classed as inferior to Clinton. Here, is as hardy as the Clinton,is larger,sweeter and better than that variety, and is the earliest grape to ripen that we have. It requires to be well pruned, and to run up high. The bunches are irregular in size and compactness, and the fruit stains, which is its greatest drawback. To stand cold, we have nothing equal to it that is eatable.

Under glass—I reject the *Muscat Troveron* and *White Hamburg* as not attaining to their best condition without fire heat. *Muscat Hamburg* also keeps up its bad habit of ripening unevenly. *The Golden Hamburg* was the show grape of the vinery, and the other varieties did about as well as usual, except that I think the flavor of the fruit was slightly injured by damage done to the leaves in August, by the vine fritter or thrip. This pest is fearfully on the increase in our country, and how to destroy it should obtain careful consideration As an experiment, hearing that carbolic acid had destroyed fleas, I put one of the insects (thrip) into it, but on coming out of the liquid, it shook itself and flew away. Last fall I covered a part of the border into which they were burrowing for the winter with quick lime, but they came up through it apparently unharmed. Attacking the vines worst just as the fruit begins to color, all destructive remedies are difficult of application.

[It is an interesting question why the Franklin is sometimes barren. A neighbor has a very large one, which, not fruiting except here and there a berry, he allowed to run wild some years ago. It rambles over a large Larch, Silver Fir, Pinus Excelsa, a Weeping Ash and some others, exciting much poetry, but, yet for all this yielding no prosaic fruit. This season, however, it surprised all by bearing a fair crop; though other circumstances are all the same, except that "the season has been favorable to all kinds of fruit."—Ed.]

DAVISON'S THORNLESS RASPBERRY.

BY H. COLLINS, VINELAND, N. J.

In Wm. Parry's essay on Raspberries, read at the Discussional Meeting of the Pennsylvania Horticultural Society, June 6th, 1869, and published in the July number of the *Monthly*, I observed the following paragraph, under the head of "Novelties:"

"*Davison's Thornless* made quite a sensation, because the thorns were not on the canes as usual, but come from the under-side of the leaves, they were said to be very early, and sold readily at $1.00 each. I obtained 600 plants and set them in good soil; have had two moderate crops of fruit. Last spring a year ago we made a large patch from the tips, grown the previous summer, but finding the fruit to ripen at the same time as Doolitttles, and not yielding as much per acre, we ploughed them under and used the land for other crops."

With all due deference to the opinions of my friend Parry, I must take the liberty to inform him and the public, that my experience with Davison's Thornless has led me to form a very different opinion of it; still, if I had a plantation of it that gave no better promise than his did

when I saw it last fall, I should serve it as he did—"plough them under and use the land for other crops."

I have cultivated the Doolittle in a small way for market, almost ever since its discovery. Last summer I picked from 4000 hills of the Thornless. The plants were set in the spring of 1868, and received nothing more than ordinary field culture. Many of them were in an orchard of pear and peach trees, and did not give a large yield; but whenever they had a fair chance, the yield was as large as any plantation of Doolittles of the same age I ever saw. The berries were large and fine, and as much earlier than Doolittle as as the Wilson Blackberry is earlier than the Lawton—maturing its whole crop—while the later berries of Doolittle were so small and dried up, as to be not worth the picking. This feature alone of the Thornless must commend it to general favor, and if Wm. Parry will go in, as I have day after day, and pick Doolittles and then the Thornless, I believe he will testify to the *comfort* of picking the latter over the former.

As friend Parry has undertaken to cry down this variety, I wish to present the testimony of some other fruit growers.

Silas Walton, Moorestown, N. J., wrote me under date of 7th mo. 28, '69, speaking of Davison's Thornless says: "The plants fruited so well the present season that I presume there will be considerable demand for the young plants."

James O. Ransom, Hammonton, N. J., and several others have given their decided testimony in its favor, but as this article is already too long, I will omit them.

MAMMOTH CLUSTER RASPBERRY.

BY A. M. PURDY, PALMYRA, N. Y.

I notice on page 313 of *Gardener's Monthly*, an article headed "*Miami Black Cap Raspberry*," in which you say that Charles Downing pronounces the "McCormick, Miami, Large Miami, Improved Miami, Collinsville Miami, Superior Miami and *Mammoth Cluster*," "all one thing." Now as I am one of the firm who named the last sort, and was instrumental in bringing it so prominently before the public, and as the above would go to show that we have re-named an old sort, I hope I may be allowed room in your columns, to make some comments and explanations. In the first place, I would like to ask Chas. Downing, if he ever saw plants *in bearing* under *all* of the above names? And secondly, if he ever saw what he *knows* to be the *McCormick in fruiting?* Mr. Underhill of Syracuse, who visited our grounds a year ago, wrote the *Horticulturist* last winter, that he had seen the McCormick or Collinsville Miami *in fruit* at Centralia, Ills., and that it was inferior to the Mammoth Cluster in every respect. I have seen three distinct varieties under the name of Miami, Improved Miami and Brown Miami, and yet every one of them was different from the Mammoth Cluster, and distinct with each other. I would further say, that Chas. Downing was on our grounds a year ago the past summer, and expressed his great astonishment in the most emphatic manner, over our Mammoth Cluster, pronouncing it then, in the presence of a number of fruit men, superior to any Miami or Blackcap he had ever seen, and urged us strongly to name it,—saying most emphatically, that it was *not* the Miami. Another proof that it cannot be the McCormick, is, that Andrew S. Fuller wrote us a year ago, that he described the McCormick in his "Small Fruit Culturist," under the name of Miami, and that our Mammoth Cluster was superior to any Miami he had ever seen—notwithstanding he had grown twenty-six named sorts of raspberries.

Another proof is, that *every single* person who has visited our grounds the past two years—among them hundreds of fruit growers, east and west, pronounced it distinct and superior to any Blackcap they had ever seen, and *not one* had ever seen it before. We have in our possession a letter from one of the most prominent pomologists in the United States, (his name will be given to the public if the necessity calls for it,) in which he says he has had sent to him, all the different Miamis he had ever heard of, and yet *that* person on visiting our grounds, pronounced our Mammoth Cluster *superior to them all.*

Another proof. It will be remembered that Mr. Mears of Ohio, wrote to the *Prairie Farmer* last fall, that this McCormick had been known 70 years, and that some 25 or 30 years ago (I think it was) plants of it had been forwarded to a prominent fruit grower east. Now I ask, does it look reasonable, that if this McCormick is the same as the Mammoth Cluster, that its valuable merits would not have been discovered long ago, and brought to the public notice by some of our live fruit growers or nurserymen, east or west? Does it look reasonable that a berry that should

attract the attention and gain the hearty endorsement from such men as Chas. Downing, John J. Thomas, H. E. Hooker, T. C. Maxwell, Andrew S. Fuller, D. D. T. Moore and others, could have been so long cultivated and yet not brought to the public notice ere this? Does it look reasonable that we should have lived at the west 12 to 15 years, and been so well acquainted with fruit growing and the markets there, and yet never have seen this quality? Andrew S. Fuller held this same view of it last winter, in a letter we have in our possession from him.

The party in Illinois, and of whom we first obtained it, claimed that it was a choice seedling on his farm, and may it not closely resemble in many respects (as all Blackcaps do) the McCormick, and yet be superior to it in other respects?

May not the specimen fruit that Chas. Downing has seen, be our Mammoth Cluster instead of the McCormick, (as we sent it out for a year or so by mistake for Miami to different parties,) and to the party whom we obtained our first plants, might have sent it out to others, and thus it might have become disseminated. These things should all be considered before quite so much haste is shown in giving a mere opinion that so many different names belong to the same berry. We simply *know* it is *not* the *Miami*, for we have known and grown the sort that is generally cultivated throughout by that name for ten years, and it has been readily recognized *as such* by every judge of this fruit, who has visited our grounds, and its distinct characteristics from the Mammoth Clusters growing by its side, readily seen and acknowledged by all.

It must be seen that such an opinion will do great harm, for many who have not got the Mammoth Cluster, but have sorts by their different names, will take it for granted that they are identical, and without any intention of imposing on the public, offer and sell such as the Mammoth Cluster. The Miami we have, certainly does not answer to the description that Downing gives to a variety he says is grown in Ohio by that name; for ours, instead of being a more brownish color, is a more glossy black than the Mammoth Cluster, and instead of ripening at the same time, ripens fully a week earlier, but keeps in fruiting nearly as long. I would therefore repeat your enquiry. "By what name had this better be distinguished?" that is, the sort Downing refers to. We have sold ours for years by the name of Improved Miami, to designate it from a berry that was being disseminated through the country as Miami, and which was but little, if any, better than the common blackcap of the woods.

It is certainly strange that intelligent men, who pronounced this Mammoth Cluster distinct from any Miami they ever saw, and one of which was growing on our grounds and which *they* readily recognized as Miami, should now couple the Mammoth Cluster with such and pronounce them the same.

What the public want is *facts* and not opinions, no matter by whom the latter are advanced.

PEAR CULTURE.

BY DR J. S. HOUGHTON, PHILADELPHIA.

The remarks made by the Editor of the *Gardener's Monthly* upon my essay on Pear culture, at the October meeting of the Pennsylvania Horticultural Society, may seem to call for some reply upon my part.

Mr. Meehan is at once over-kind and over-rough to me. He at first applies a dose of honey and soft-soap, and then proceeds to polish me down with a brickbat. In like manner the good-hearted skipper in Capt. Marryatt's novel, finding Japhet with unclean teeth, very kindly undertook to polish them with soap, sand, salt and old canvas. Japhet with bleeding gums, resisted the skipper's kindness. He did not like the style in which it was done. No more do I like the present method. It is very kind no doubt, and well meant. It may be very funny to some, but the fun is "not for Joe." But it is also very cunning, and is likely to place me in a position which I believe I do not deserve; that is, in the position of a man who has made a ridiculous failure. I do not think Mr. Meehan intended to do this, but such is the effect of his remarks. In discussing the "grass" question, he has inadvertently thrown stones instead of grass. His badinage instead of being light railiery alone, is too much like solid shot. With all deference and good humor, I appeal from his decisions, and respectfully decline the position which he assigns to me.

In the first place, I deny that my experiments in Pear culture have proved utter failures.

When I commenced planting Pear trees, nearly twelve years ago, it was almost impossible to find any established system of culture, pruning,

&c., which could be studied and adopted, without question as to its correctness, as indeed it is now, for most persons not well posted up in the art. Although I had assistance, from persons supposed to know something (but who *did'nt know*), I have been at least eight years learning how to plant and cultivate, and prune. In these eight years, I have adopted and discarded two or three methods, especially in pruning, until at last, I believe I have landed on safe and sure ground. My difficulties as to pruning, are now all past. I have the most perfect control over the production of fruit spurs. I believe I can fruit any pear, even the Dix, in four or five years, and most kinds in three or four years.

Now I have upwards 25,000 pear trees, planted for fruiting, and all in good health and vigor. I have never suffered from summer blight, and have not lost twenty trees in ten years by winter blight. I have not over-manured my trees, nor have I neglected to manure them. I have now just reached the end of my planting, and feel satisfied that I have learned how to plant and how to manage a Pear orchard.

During the last ten years, while engaged in planting, I have had but two or three good crops of fruit, and only twice has the fruit been of fine quality.

The want of success in the production of fruit, has arisen from the following causes:

1. The pyramidal system of pruning, which I have now abandoned.

2. Cold winds, rain and frost at the time of blossoming and for two weeks afterwards.

3. Fungus and insects.

4. General climatic influences adverse to the production of fine fruit.

The question of "grass or no grass," surface cultivation or no surface cultivation, does not come into account at all.

The plain fact is, that for fifteen years past, nobody in the State of Pennsylvania, (out of the cities) has produced any fine pears of any consequence, until within the last three years. Neither the Pennsylvania Horticultural Society, nor the State Fruit Growers' Society ever made a respectable exhibition of Pears without the aid of Western New York and Boston. We hear the "oldest inhabitant" talks of a period when "Butter Pears" were perfect in Pennsylvania, but that was before my time.

As to surface cultivation, that has really nothing to do with success or failure in fruiting Pear trees. The difficulties remaining with me are almost wholly climatic.

It might be supposed, from Mr. Meehan's remarks, that I am constantly digging among the roots of my Pear trees. Such is not the case. My dwarf Pear orchard is simply ploughed in a very shallow manner, with a light steel plough, (the Clipper plough made at Ilion, N. Y.,) three or four times in a season, just as nursery rows are ploughed, and the hoe is used between the trees to keep them clear of weeds. No crops are grown between the trees. In ploughing, very few roots are ever exposed or cut. The truth is it is not possible to plough near enough to dwarf trees with a horse to cut the roots, which are in a compact mass several inches below the furrow. It hurts the trees just as much as it hurts nursery stock to plough it, and no more; and every nurseryman knows that it makes the stock grow so thrifty, that they are compelled to cease ploughing after August, to secure the ripening of the wood.

In respect to the question of the comparative coolness of a ploughed field, and a grass covered field in summer, I have only to say that my well ploughed ground is always moist in the period of severest drouth, and my trees never lose their foliage. Mulching is a good thing; but a well-ploughed field, as all good cultivators know, is the best possible mulching—that is, a mulching of loose earth.

That the want of success in the production of fine Pears in Pennsylvania has been, and is, one of a climatic character almost solely, I have proved by the following experiment:

Last spring I placed a part of a row of Beurre Clairgeau Pear trees under the protection of glass, just before and during the blossoming period, and secured a full set of fruit on every tree so protected, while on the adjacent trees of the same variety, and thousands of other trees of all varieties in my orchard, the crop was destroyed by cold winds and rain.

Another remarkable circumstance was soon observed in relation to the protected fruit. The B. Clairgeau on the adjacent trees, and throughout my orchard, in different places, soon turned red and high colored, as the variety generally does elsewhere, and became spotted with fungus, (often so much disfigured as to be worthless), as B. Clairgeau does in many other places, and other States. But under glass, the fruit retained a perfectly pea-green hue for several months, with a bloom upon it like the bloom on foreign grapes,

and scarcely a speck of fungus appeared upon any of the specimens.

The sashes were removed in August on account of the labor of watering and syringing the trees, and the fruit soon lost its delicate green color and became spotted and colored like other fruit of the same variety.

Now I am ready to admit that Pear culture in Pennsylvania has for several years past (say fifteen or twenty years,) been a comparative failure in open orchards; but I deny that my particular system of culture, as now perfected and practised, has been or is a failure, even under the adverse climate of Pennsylvania. All my failures have been under the old system of pyramidal pruning. At present, I claim that my Pear culture is not a failure, but (so far as man is able to make it so) a decided success.

I am now ready to enter into a contest for the championship of America in Pear culture and Pear growing, with any cultivator, or any number of cultivators, in any place which has ever shown fruit at any horticultural exhibition prior to 1869. I make an exception of the year 1869, to exclude California and the man who grew the big Duchesse d'Angouleme, near Norfolk, Va.

I did not intend to brag, but since Mr. Meehan has rendered it necessary for me to do so, I will say that I believe I can grow almost any Pear of a size, quality and beauty, that cannot be surpassed in any of the Middle and Northern States, with the utmost degree of certainty, in any season when icicles do not form on the blossoms, and I intend to do this before many years pass over Mr. Meehan's head; and I shall send him such a box of specimens, that he will be compelled in all his honesty to acknowledge the serious mistake which he has made about my supposed failure.

The truth is, that nature as well as art, seems to be helping us to produce fine Pears in Pennsylvania. This year, the crop everywhere has been better than usual, and the quality, the (flavor, and aroma,) have been really remarkable. My own crop has been very good, and the quality of the fruit in many instances, superior to any of the best northern fruit. The Duchesse d'Angouleme, which is often coarse, insipid and watery, is this year, on my place, rich, aromatic, sweet and delicious in the extreme—as good as the very best Pears—and taste, as one person said, "as if they had been sugared down."

My display of fruit at the exhibition of the National Pomological Society, (much to my surprise) was but little inferior to the best fruit from any of the states, except California, in point of size and general excellence, though a little darker in the skin,—the effect of our climate. Of one variety from my orchard, Marshall P. Wilder said, "we cannot grow it so large in Massachusetts." You will see that remark in the official report.

Once more I deny that my system of cultivation or pruning is a failure, and I contend that I will yet overcome the difficulties of climate; and I hope nature will temper the winds to our tender lambs.

THE WELLINGTONIA (*Sequoia*) GIGANTEA.

Its growth in England and Rochester, N. Y.

BY P. BARRY.

In the English *Gardener's Chronicle* of October 9th, a correspondent gives the measurements and ages of some fine specimens of this noble tree growing in Lamorly Park, Kent; they are as follows:

No. 1, planted in 1854, is 29 feet 10 inches in height, 19 feet in diameter of branches and 6 feet 9 inches in circumference of trunk at one foot above the ground.

No. 2, planted in 1856, is 25 feet 2 inches in height, 14 feet 8 inches in diameter of branches, and 5 feet three inches in circumference of trunk at one foot above the ground.

Four years ago I gave in this journal, vol. 7, p. 268, a statement, showing the age and measurements of our trees, Ellwanger & Barry's, at that time. For the purpose of comparing the rate of growth of this tree in our grounds, with the finest specimen in England, I have had measurements made to day, October 23d, 1869. One tree not much different from the others in a group of 20, measures as follows: Planted in 1857 when about a foot high; now 24 feet in height, 11 feet in diameter of branches, 3 feet 9 inches in circumference of trunk near the ground. This shows a gain of about 10 feet in 4 years, and the average growth in height over the 12 years, is 2 feet per year.

The average of the English trees is a trifle less than 2 feet in height per year; but they exceed ours in average growth of circumference of trunk.

This is doubtless owing to the fact that our trees have stood in a group, too close to admit of the fullest lateral development.

P. S. I would like to hear of its growth at other places in the United States.

EDITORIAL.

A DECENNALATORY.

Ten years ago to day we closed our first volume of the *Gardener's Monthly*. We believe no purely horticultural journal before or since, ever had an equal list of paid up subscribers. It fell off as did others, during the war; but the past two or three years it has steadily risen from its lowest point, until the publishers are enabled to announce their ability to spend more than heretofore on the embellishment of the work, *without any increase of price* to the subscribers.

Editorially, we feel grateful for this confidence. Though labored attempts have been made to weaken public regard for magazines "edited by nurserymen," or those having "horticultural establishments," it has been made clear that the garden and nursery afford at least as good a school for the conductors of magazines, as the parlor or counting room. We boast not of any superior learning or ability; but take a pride in the publishers' exultant success, as indicating that the great horticultural public, which is so zealously supporting them, has not suffered by our daily associations with the soil.

Readers! let us make the next ten years as successful as the past. Without our monthly intercourse together, where would our knowledge be? You who have followed us regularly, hardly know; but ask those who have been compelled to drop out of our charmed circle. The numerous letters of those who are coming up from the Lethean depths again—who have left us in times past for other gods, or from a natural blindness to the light they were enjoying, tell the best story.

Subscribers! you in whom the publishers put their trust,—feel as you have ever done, that the paper is your own. All the publishers can afford, they give you,—all they can spare, they share with you; act towards them as you would to your steward,—give them what encouragement they merit; and your counsel wherein improvements can be made.

Contributors! the Editor has his best wishes for you! Working far more for the love of horticulture than for profit; constantly declining opportunities which might make him richer in this worlds goods, but poorer in the means of horticultural usefulness; he can appreciate the merits of those good friends who are actuated by the same spirit. He believes no magazine ever gave publication to so many new and valuable facts in the same time; and all this has been from the unpaid, and in most cases unsolicited offerings of true lovers of the gardening art.

Friends of all classes! help us to create a taste for horticulture in every corner of the earth; and to give a true horticultural spirit to all the inhabitants thereof. We shall not bribe you by premiums or promises, *to do your own work*. We of the *Gardener's Monthly* are your servants. It is your interest that others participate in the same pleasures of which you partake. A garden with no one to enjoy it, is a poor paradise; an enthusiast with no kindred spirit is not an enviable mortal. So therefore you who enjoy fruits and flowers, and trees, and lawns, and gardens, and who long for sympathy and encouragement from your neighbors and friends,—*pass around our journal*; and we on our part, shall endeavor to make it worthy of all you say of it, and help you to prove that a garden *is* the purest of all human pleasures,—the purest, the cheapest, the healthiest, the best.

TREE HISTORIES.

With every new fruit or rare plant, comes a curious history. The Fuchsia was said to have been first discovered in an old cracked tea-pot, grown by a poor sailor's mother, whose son nursed a plant in the forecastle of his ship, on the long voyage from South America. Rare Tulips have been in danger, during the mania, of being eaten in mistake for onions by careless sailors, who notwithstanding the immense value of the bulbs, had the chance to lay their hands on the roots lying around looser than we should allow potatoes to do. We find scarcely an old tree anywhere, but it was either "planted" by General Washington; from the stone of a fruit eaten by Washington; or brought in somebody's saddle bags, hundreds of miles. "Riding switches," used on the horses of hundreds of lady travellers, have been stuck into the ground, and have made grape vines innumerable. Fruit trees without number—valuable seedlings—come into existence in a semi-miraculous manner. Indeed, unless there is some sign or wonder exhibited at its birth, it is rare that any great ex-

ceilencies are found. In one case, a bed of some hundreds of apple tree seedlings has every plant but one eaten off. The damaged plants push again. Singular to relate, they are eaten at the root by gophers, and this time totally destroyed; but the one left by the rabbits is still untouched. The owner struck by such a marvellous occurrence, dares not graft the wonderful escapement as he intended, but lets it grow up to the bearing state; and he is not surprised to find it "a head and shoulders" above anything heard of. The neighbors come together for miles, to see the new born prodigy, and unanimously crown it the "king of fruits."

Now all these things are vouched for by honorable men. We are not joking. Similar stories to these are implicitly believed by thousands of people in all sorts of instances. We have had histories of things given to us by people whom we know are above untruth,—by people whom we are sure implicitly believe the stories they tell us,—and yet we are nearly sure in many cases their tales are without foundation, and some we are *certain* never occurred.

We have shown in a former volume of the *Gardener's Monthly*, that the accounts we have of the origin of the Bartlett Pear, must be apocryphal, and we are continually in trouble with peoples' "undoubted facts" in the same way. Recently we went to some trouble to see a living tree of the Carolina Ash; the introduction of which tree into the owner's grounds from one specific tree of the right kind was so circumstantial, that we never had the slightest doubt of its authenticity; yet now in fruit, it was nothing but the common northern Ash, *Fraxinus acuminata*. The owner is now deceased; but on his authority, many strange facts have gone into the written history of trees; and even into European arboricultural standard works; and we have now no doubt are as inaccurate as this. Is there a natural law which decrees that not even memory shall live forever? Which in time so distorts things by some means of which philosophers have been unconscious, that we first begin to believe them false, then laugh at, and end by losing interest in and forgetting altogether? Is nature determined that we shall never know from whence we came, or whither we are going, and does she take this way to destroy the tracks man has made in his progress through eternal ages? For thousands of years has our race peopled this earth, and anthropology tells us that they were in most things as wise as we; yet their traces are lost, and "six thousand" is the most that the wisest can definitely suggest; and of this, only the history of yesterday finds much credence, and barely that. The older the history the less it is believed in, until as age by age advances, one by one of the farthest is lopped off by all but a few, and passes away. Even with these few it is freely granted that the oldest facts on record, are well nigh impossible; and this is true of science as of any branch of historical literature.

But whether there is or is not any way of accounting on philosophical principles, for these self-deceptive stories, there is no doubt of the fact that we should always receive all "facts" which may serve to build principles on with great caution. We are suffering every day from a false philosophy, because built on somebody's "facts" which ought not to have been credited; and in vegetable physiology and the kindred sciences, so many things are taught on just such authority, causing much infinite trouble in the every day practice of horticulture; that it behooves all writing of facts for our journal, to be particularly careful that they are not deceived themselves, and all who listen or read, not to credit too easily everything that is said. If it were not for the "systems" built on these supposed facts, it would be no matter.

DR. HOUGHTON'S PEAR CULTURE.

In our last number we gave Dr. Houghton's Essay on Pear Culture, and the discussion thereon at the Horticultural Society's meeting. It will be remembered that the leading speaker on the essay imbibed the idea from the reading of the essay, that the Doctor was himself conscious of his own failure. It will be seen by a reply in another column, that he recognizes no such misfortune, but on the contrary is well satisfied with the results of his present practice. With the article came a basket of most glorious Duchesse Pears, and if the "proof of the pudding is in the eating," there is surely success in these. It is clear that our good friend is neither a "dead duck" nor a "live goose" in pear culture; and if he does not even rise to the dignity of a "crower" and raise his voice over Meehan, and all opponents, it will not be that he does not deserve to do so.

SCRAPS AND QUERIES.

GRAFTING CHESTNUTS.—*W. B, Glen Mills, Pa*—"I have seen large trees of Spanish Chestnuts which I was assured were grafted on common Chestnuts. I have tried the operation several times but always unsuccessfully, Have you had experience in grafting Chestnuts? I sometimes think that as some salts of iron are injurious to vegetation, the dark film produced on chestnut bark by cutting with a steel knife may prevent union."

[There is no general difficulty in grafting the Chestnut; although like all kinds of grafting special knowledge has to be given each plant—to be gained only by experience. If you fail once try a little earlier or a little later. Some who graft extensively, find it is necessary to graft very early. The Beech, for instance, is one which has to be done very early in the season; and some growers even find it to their interest to take up the plants and graft in winter, in order to get this extra earliness. We have had no experience with Chestnuts; but as it is of somewhat the same nature as the Beech, perhaps you might succeed with this early plan.]

RETINISPORA ELLWANGERIANA.—The following interesting note is translated from *Revue Horticole*. On what principle any "botanist," who admits that a plant is a seedling from *Thuja occidentalis*, can proceed to describe it as a "Retinispora" is beyond our knowledge. Carriere has had many objections made to his views of things, and we do not think this helps to make matters clearer. Our readers know how to account for these changes in form in Coniferæ, which knowledge has not yet reached France; but the observation of M. Carriere, that the sensible properties of this Thuja follows its form, is a highly interesting fact. There is another fact which, however, M. Carriere has not noticed, but which must be familiar to most American observers, namely, that color, as well as properties, goes with form. All seedlings of Thuja, while young and in the free leaved stage, have a purple tint in winter; when the adnate leaved stage occurs, the color is a pingy greenish brown; but in these free leaved forms, as Tom Thumb, Meldensis, Ericoides, &c., the purple color of the young plant is retained all through with the young or free leaved condition. The *Revue* says:

Here we have another plant, remarkable for its origin and diverse character. On these two accounts, it is worthy of our attention, by showing us how certain types are formed and to what their properties are due. Its origin, although apparently strange, is not without precedent, on the contrary it clears up certain doubts which have existed in regard to one of its congeners, the Retinispora dubia, which it resembles in several respects.

It was originated by Mr. Ellwanger, a nurseryman of Boston,* from seed of the Thuja occidentalis, which it resembles in its flattened shoots. This will be observed in fig. 74, which represents the R. Ellwangeriana in question.

But one of the most remarkable characteristics, and which, to a certain extent, confirms another law of which we have already spoken, and which we may state thus: *The properties of bodies are in harmony with their nature and* ESPECIALLY with their forms, is furnished us by the R Ellwangeriana. All its flattened shoots, when pressed in the hand, emit a strong and agreeable odor, similar to that of the Thuja occidentalis, whilst the cylindrical shoots do not. Besides, as there are flat and cylindrical parts on the same shoot, it follows that we find contiguous parts fragrant and others entirely without odor. This is a most remarkable fact, to which we call attention.

The R Ellwangeriana, Car., Thuja Ellwangeriana, *Hort.*, forms a bushy shrub, very hardy and not without elegance. It succeeds in nearly all kinds of soil. It is multiplied by cuttings, which root readily without artificial heat under glass. Indeed, if the branches but touch the soil they will take root. It may be observed, however, that the flat branches do not root so readily as the cylindrical, which tends to confirm what we have said: "That the properties of plants hold an intimate relation with their forms.

THE CACOON VINE.—*B., Glen Mills, Penna.* writes:—Three seasons I have had growing a plant somewhat resembling that from Nassau, described by L. B. in your October number. It is common in some of the Southern States, where it is known as the *Dish Cloth Gourd*. The internal fibrous portion is commonly used as a dish cloth, and in Louisiana and elsewhere, colored women cut into it on one side take out the seeds and fashion it into a sunbonnet. I first got one of the gourds from Mobile, and have since received seeds from North Carolina. Owto the shortness of our seasons I have never been able to mature the fruit. Last year I had one vine which when killed by frost, had upon it about a dozen gourds, several of them a foot in

*Ellwanger & Barry, Rochester, New York,

length, resembling a long straight squash. This year, owing to the drought, the vines were very backward, and when frost came I had but one about five inches long. I think it may possibly be matured in this State, as I read that a gentleman at Morrisania, near New York, had succeeded in perfecting it there in the open air.

[This is the same plant that L. B. referred to. In the West India Islands it is used for washing dishes– as a dishcloth—hence the name. L. B. has sent us the skeleton of one about nine inches long, which we have placed amongst the articles in our collection.]

EUONYMUS AMERICANUS.—L. B. sends us some seeds and capsules, with the remark that it is well worthy of culture, with which we heartily agree. We have already two kinds in general culture:—the Euonymus Europæus, English Burning Bush, and *E. atropurpureus*, the Mississippi Burning. This one, more beautiful than either, is seldom grown. In its native woods it is but a weak trailing shrub; but when out in the open sun light it makes a strong upright bush of great beauty.

LAWNS.—*J. S., Jr., West Phila.* says: "I had the ground for my lawn dug over two spits deep two years ago, well manured and sown with the best lawn grasses. The first year all did well, and I had a handsome sod. This spring the grass also looked very well, but as the season advanced, I noticed a considerable amount of crab grass, and towards the latter part of the season the whole lawn was pretty much covered with it. This character of grass does not now show very much, but where it was thickest, there is nothing but burnt grass, everything grown having been destroyed.

During the early part of the season I used a lawn mower frequently, keeping the grass a pretty short length. During the drought I watered freely, but with all, the lawn in my estimation is a perfect failure.

Can you give me any advice as to the best course to adopt in order to obtain what I aimed to secure in the beginning, viz., *a perfect lawn.*

I do not dare to think of digging it all over, as all the trees are planted, and the ground is in the shape I desire, besides which, it is a fearful undertaking."

["Lawn Grass" is a sort of a "patent medicine," in which much more profit usually goes to the seller than to the buyer. It is mostly made up of foreign grasses not well adapted to our climate. For us, we want nothing better in the north than Rye grass, (*Lolium perenne*) and in the Middle and South-west States Green grass (*Poa pratense*). This will crowd out the crab grass.

You need not dig it up again, however. Rake the surface over early next spring, and sow Green grass in the rough ground, and then roll it over. It will scarcely be strong enough the first year to entirely smother the crab grass, but it will very nearly do so; and the next season it will almost entirely have disappeared.]

MEXICAN EVERBEARING STRAWBERRY.—In accordance with our practice to give our readers all sides of every question, we may observe that Mr. Bateham, Mr. Hathaway and Mr. Campbell of Delaware, all cautious and careful observers, have recently placed themselves on record against the value of this fruit.

IONA GRAPE—Mr. James Laws, of Germantown, had excellent success with this again the past year. As we have said before, his soil is on a dry rotten rock. He has two vines two years grafted on Concord, and the produce was about 20 pounds to each vine, and bunches about ¾ lb. each. In one bunch 84 perfect berries were counted.

THE SALEM GRAPE, on the grounds of the same gentleman, grafted on Isabellas, also did remarkably well. There were from 30 to 40 berries on the clusters, and finer looking bunches than average Black Hamburg.

ALPINE STRAWBERRY.—We are indebted to Mr. A. S. Fuller for some plants of what he considers the old red Alpine Strawberry, which we shall plant with much pleasure; and shall be glad to have from other friends any varieties of alpine they may have. There is evidently considerable confusion somewhere in these varieties, and only careful examination will set them right.

We happen to have a corner in which was an old wood pile, and shaded all around by buildings, just the place for Alpines to grow, and we promise ourselves some pleasure in hunting out facts here.

The Alpines have been a much neglected and are yet a deserving class, and we are glad that

attention is being given to them. Those who will try them, may profit by a suggestion of Mr. Wier, at the Pomological Convention, that probably the wet season has helped them at Detroit. No doubt a wet season is favorable to Alpine Strawberries, as is also coolness and shade, and those who would give these things a fair trial, will of course select the most favorable places, and not expect to gather grapes from thistles, Tomatoes from the shade of maples trees, or Alpine Strawberries from hot gravel banks.

QUALITY OF PEARS—"*Addi*" sends us the following: "The taste of a child is generally counted as good. To day Nov. 7th, 1869, I cut one pear each of Beurre d'Anjou, Beurre Defais and Beurre Clairgeau, all about equally ripe. I gave one piece of each to one child five years old, one nine years and one eleven years. The reply on asking for the best was, the first was most soft but sour, second was soft and sweet and good, third was gritty but sweet, altogether they liked the second one best. My own taste coincided, and I fear that the Beurre Defais is a variety too little known and appreciated, in comparison with its real value The tree is hardy; a strong, vigorous, healthy grower; bears young and profusely on the Quince stock, is of above medium size in fruit, smooth skin, pale yellow, handsome and commands ready sale, at a price one-third above Beurre Diel or Beurre d' Anjou."

GARDENERS, &C.—We are nearly run down with letters asking for gardeners, foremen, propagators, and occasionally, even "how to make money?" Some it is true offering to pay us for our trouble; and others asking it as a matter of right, apparently. *We dont know anything about this business*, AND MUST DECLINE TO ANSWER ALL SUCH LETTERS.

SIBERIAN CRAB.—*W. B.* says: "In a recent number of the *Monthly* you speak of the Siberian Crab as a Russian apple. I have read, (I am sorry I cannot recollect where,) that this crab was found wild somewhere in the United States, but that nurseryman who brought it before the public misrepresented its origin to enhance its value. I should be glad to know the truth of the matter.

[This is an error. Some varieties have been raised in this country, and some nurseryman may have misstated that their variety came from Russia. But the original species is of Siberian origin. *Pyrus coronaria* is the nearest ally to the Siberian that we have native here.]

ERRORS IN ADVERTISEMENTS.—*Ampelopsis Vietchii.* In our last appeared an advertisement of a new and beautiful plant by Mr. Charlton, but it did not say *what the plant was.* Ampelopsis Vietchii was the plant intended. It is a beautiful plant, and Mr. Charlton is doing good service by introducing it His address is Rochester, N. Y.

Peach Seed—The types also made our friends, John Donaldson & Co., offer Peach Seed at $3.50 per bushel instead of barrel. They have quite a large stock.

PAGE'S PUMP SPRINKLERS.–These seem to have great merit. The water is forced through the *working rod*, and a flexible tube in one hand, with the handle of the piston or working rod in the other; the work is very simple. It makes the best kind of syringe for greenhouse work.

EUMELAN GRAPE—*J. W. M., Exeter, N. H.* "The Eumelan Grape, would it be of much value to us *here* in addition to our present stock, such as Delaware, Creveling, Concord, &c."

[The Eumelan has not been fruited in many places; but so far as we are able to judge, from this limited experience, it is likely to be a good addition to your Exeter collection.

TREATMENT OF AN APPLE ORCHARD—*W. J. McC., Toronto, Canada*, says: "I have a young apple orchard which I planted some four years ago, I have grown root crops in the same ground, and the trees have done well; now the trees begin to be so large that it is difficult to continue this mode of cultivation, and I feel at a loss to know what is best to do. Perhaps you would be kind enough to give me some information. You may have treated on this subject before, but, during the three years which I have been a reader of the "*Monthly*," I don't recollect to have seen anything."

[It is very difficult to advise in a case like this, without seeing the orchard in question. Much of what ought to be done, will depend on what materials are at hand to do the right thing with. When root crops are grown, the trees get fed as well as the roots,—often when root crops

stop, the food for the trees stop also. We should put the orchard down in grass, and top dress once in three years, unless there are other local reasons for another course of treatment.]

Mr. Quinn's Pear Trees.—When *Hearth & Home* illustrated "the falsity of a certain Editor's theories" by virtue of Mr. Quinn's example, we fear it did not tell us all the story. Mr. Lyman has also been visiting this orchard, as well as certain editors of *Hearth and Home*, and this is what he says:

"During a late visit to the farm of Mr. Quinn, two trees were pointed out, one of which was very inferior to the other in size and thriftiness. On inquiry, I learned that they were planted at the same time, but it happened that the carcase of a polecat rested at the root of one, whilst the other was not similarly favored. This pair of pear trees have been bearing for the last six years; the one, one bushel, the other, two bushels—a proportion which is likely to go on for twenty years more."

It is probable it was a short supply of cats, and not the existence of grass which "falsified the theory." "Un-feeline" cultivators need expect no more pears than uncultivating ones, after this

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Birds.—In the East we have too few birds, in the West they appear to have too many. J. H. Tice, of Alton, has a considerable item in his "expense account" against "powder and shot."

Strawberry from Bolivia.—Hon. J W. Caldwell sends to Commissioner Capron seeds of the Strawberries grown there. The flavor is not so good as those grown north possess; but they bear continually, and are of fair size. The crop is produced four months from the same bed.

Raspberries in the West.—A correspondent of the *Rural World*, says: The red, yellow and black Raspberries are more popular and more profitable in the West than any of the foreign class.

Ridge Pippin.—"*Amateur*," *Alleghany, Pa.* "Is this a Pennsylvania apple? I saw it recently classed as such, but thought it came from Montgomery Co., N. Y."

[All right except the "N. Y." It should be Montgomery Co., Pa.

We believe it is a seedling of Bellefleur, judging from appearances. If any one takes up our hint about classifying from "types," this will be found under the *Bellefleur* head.)

Apples from Bedford, Pa.—T. M. L sends us some specimens for a name. It is supposed to have been brought to that place and the name lost. We cannot identify it positively. It belongs to a class of apples very difficult to determine.

Grape Photograph.—From Dr. Lawrence, Hot Springs, Arkansas, we have a photograph showing a branch with scores of bunches, on some of which we can count over seventy berries on the "visible side." The berries too are thicker than the canes which bear the bunches. On the reverse of the card is "Lawrence's Native Onachita Grapes, Vitis Æstivalis. Wild Land, Hot Springs, Arkansas. Compliments to T. Meehan, Esq."

We should judge from the picture that the living sight must make a "Splendid show."

Public Park in Boston.—One would suppose that Col. Wilder, in view of so much that he has accomplished during his long life, would want to rest from his labors; but we see, by the Boston papers, that he is actively amongst the most active in getting up a park, that shall in some measure compare with Prospect Park at Brooklyn, or Central Park, New York. It is a proverb in Boston, that whatever Col. Wilder advocates succeeds. We may therefore look on this Park as a "fixed" thing.

Fruit Crops at Harrisburg.—*W. T. H., Harrisburg, Pa.*, writes: I have had a pleasant year's experience in the fruit line. Apples abundant, and Pears did well, with little show of leaf blight, and none of the real pear blight. My young peaches have done well; and by the process of jarring the trees to catch curculio, we have had a varied success in plums, some trees full, others a partial crop. My Concord and Hartford Prolifics bear well, and ripened very rich in flavor; Crevelings were a failure, I shall dig them up; Clintons bear abundantly, four year old vines bore about 25 pounds to the vine, ripening finely about two-thirds of the crop, and the balance not fully. Early in July, the Clinton were attacked by gall aphides, which in a

very few days extended over the entire Clinton vines; (the *American Entomologist* has a full description of them,) this I think weakened the vines preventing them from fully ripening their crop. My wine made last fall ripens up very fine, and I have made a much larger quantity than last year."

The Magneville Honeysuckle.—*J. H., Old Westbury, N. Y.*, says: "I perceive thy description of the flowering of the Magneville Honeysuckle is quite different from ours, which we procured at two different places. Ours has small flowers and is a very moderate bloomer; flowers white and yellowish, and very pleasant fragrance, but in beauty of bloom, is no comparison with the Chinese or Belgian. Flowers I think resembles the Halliana, which it may be."

[The true *Magneville* variety is a variety of *Caprifolium periclymenum* or English Woodbine. The Belgian is a variety of the same. The ones you name are varieties of *C. Japonicum* with which Magneville's has no relation. It is more like Belgian than than the others. Flowers larger and earlier.

Mexican Strawberry in the East.—*J. W. M., Exeter, N. H.*, asks: "Do you think the Mexican Everbearing Strawberry would be of much value to introduce in this vicinity in addition to the Wilson Aloany, &c., all things considered, (*hardiness, productiveness, &c.?* How late does it continue to fruit after the Wilson?"

[We have only seen this variety in fruit at Dundee, Mich. It appears hardy and productive; but you must remember that the berries are not as large as strawberries usually are, and have a different flavor. Some people don't like small berries, nor berries without some acid, and some don't like fall bearers at all. Whether or not it will be valuable to introduce, will depend on the taste of the people. We shall introduce it to our garden next season. We have not, before this, met with any alpine, which we did think worth planting.

Strawberries in October—"Rural," says in *Chicago Tribune*, that a bushel of Mexican strawberries were served up with ice cream at the annual fair at Centralia last October. A. Willard who was present, writes to the *Rural New Yorker* that they were "delicious to the taste."

Grapes at Bluffton, Mo.—Colman's *Rural World* reports operations as very successful. They leave the wine on the husks longer than usual with most wine makers. "The longer the better for the wine, until it is thoroughly cleared." Norton's Virginia was the kind worked on at the visit.

Rat-tailed Radish.—The Editor of *Nova Scotia Journal of Agriculture*, reports that there is no greater delicacy than this when pickled and eaten as a salad; and that the time will come when they will be grown in every garden.

Grafting Magnolias.—*J. A. V. Z., Newton Hamilton, Pa.* These are usually put on the acuminata or tripetela as a stock, usually by budding however, and not by grafting. Some find a difficulty. Those who succeed, fancy the secret is in taking out the wood from the bud, and not using it as in the usual style of American budding; however, we do not think that this makes much difference. We believe success rather depends on timing the buds exactly to the stock. This will vary with season and locality, and only experience can teach it.

Treatment of Osage Orange Hedges.—The St. Louis *Journal of Agriculture* reports that in some parts they burn off the Osage Orange plant, instead of cutting them back when they want them to grow up thick from the ground.

Bark Insects.—To destroy these, a correspondent of the *New England Farmer* gives the following:

"Make a wash of one pound of tobacco, and one pound of sal soda, put into two gallons of hot water; let it stand for thirty minutes, stirring it frequently. Then take a rag and rub the body of the trees—the lower part especially—with this wash, and the work is done."

Ramie Plant.—*New Orleans Bee* says that last month an order came to that city from Europe for 20 tons. The plant had been grown in the Botanical Garden at Washington, since 1845. Our people, however, did not seem to discover any merit in it; and only for Roezel's introduction to New Orleans from Mexico, we should not have heard much of it to this day.

LARGE APRICOT TREE.—*Hearth & Home* has a sketch of perhaps the largest Apricot tree in the United States, on the grounds of Senator Cameron.at Harrisburg. It was probably planted in 1766. and bears freely every year—last year about 18 bushels.

PORTRAITS OF HORTICULTURISTS.—*Hearth & Home* has recently been giving portraits of eminent Horticulturists—much better done than usual with newspaper wood cuts. All but two were equal to the originals, and these two not much out-of-the-way.

LARGE CHESTNUT TREE, on the farm of Mr. Cooley, in Carrol County, Geo., recently cut down, made 1500 rails, and measured nine feet across the stump.

A NEW COTTON.—A variety that has no flower stalks is exciting much attention in the South. It has one central stem, and the flowers are sessile in the axils of the leaves. It is called James' Cotton, and is said to have larger bolls, and a longer staple than other kinds.

THE WHITE DOYENNE PEARS crack badly in Canada, and their culture is about to be abandoned.

RICHARD RAGAN, one of the pioneers of fruit culture in the West, died at Fillmore, Ind., on 19th of August, 1869, aged 76.

TO DISPERSE ANTS, bury sliced onions, says the *American Entomologist.*

PROFESSOR OF HORTICULTURE.—Miss Mary Hovey has been offered the Horticultural Professorship in the Kansas Agricultural College.

BUD HYBRIDS.—The following is from a correspondent of a West Chester paper:

"Several years ago my neighbor, Jeremiah Griffith, selected two buds, one from a very red apple tree, and the other from the opposite, white, and cut them so as they fit together exactly, and grafted them together, and when they grew they made one sprout. The limb has got to bearing, being about thirty years old, and having been covered up by other parts of the tree and not cared for. One of the apples I send you, being as the experimentor expected, (though dead these many years,) white on one side and red on the other, looking a little like the variety called the Maiden's Blush.

[Like Mr. Barry, we do not believe in this; yet are not disposed to set it down as impossible, because, in our life we have found so many "impossible" things prove true. Let some of our grafters try it this winter. It should do as well by grafting as budding. We do not know enough of the secrets of cell life to pronounce on the impossibility of the thing. ED. *G. M.*]

PEARS ON APPLE TREES.—*N. B. Hale, Norwich, N. Y.*, says in the *Utica Herald*, that Sops of Wine often produce Pears. Some other kinds he says, which have round apples will often produce them Pear shaped; but this kind produces real Pears! N. E. Simonds, of Throop's Bay, reports a similar experience.

PRUNING TREES WHILE FROZEN.—*P. R., Bloody Furnace, O.*, says: "In an essay by Dr. Warder, he says never prune trees while frozen. We trim in winter on account of the leisure, and never noticed any injury. Is there any reason for this advice?"

[We think there is some reason. Contrary to old notions about the sap resting in winter, we know that it always flows. Where a branch is cut, sap oozes out, no matter how hard it may be freezing. Sometimes it is true, this oozing is imperceptible. This exposed sap freezes and bursts the vessels in proximity to the cut portion. Of course the *amount* of injury will vary with circumstances. We have never noticed much injury; but no doubt Dr. Warder has, or he would not have condemned so pointedly.]

NOTES FROM ST. LOUIS.—We make the following extract from a letter from Mr. Shaw, of Tower Grove, Oct. 30th.

"At the gardens at Tower Grove, previous to the frost, we had gathered the fruit, of which the pears were particularly fine, well ripened and abundant; the grapes were allowed to hang longer than usual, to counteract the acidity so general in native wine; the Catawbas till Oct. 12th. There is some loss in letting them remain so long from over ripeness and birds, which may be expected to be compensated in the quality of the wine. Ives' Seedling in abundant and early bearing, competes well with Concord, and is said to be better for wine. Delaware maintains its ground for the dessert, and Hartford when well ripened, for cooking and preserving.

We had abundance of figs—the Brown Smyrnas ripened well against the east wall; the Kennedy Castle sort (from Lawson's Edinburgh,) has not yet proved its fruit, nor the Caloille Blanc and Golden Pippin apples from same source.

Was gratified a few days since at the visit of a highly intelligent gentleman from London to our arboretum; as his opinion that it is the best collection of trees he had ever seen in his visit to this continent, each tree being planted with reference to its future growth and development as a specimen of its species, which could not so well be attained by planting in groups for landscape effect. How different from the impressions of your *blase* correspondent, who describes his walk through the same grounds as wearisome and monotonous—in the absence of mulched fruit trees and strawberries on hills!

We are progressing finely with the park, the ground being in fine condition; as preparatory to planting, we subsoil by ploughing 18 in. deep, requiring 12 oxen, (this costs $18 per acre,) where trees are planted, holes are dug 5 ft. and 3 ft. deep. The arborvitæ hedge 3 miles in extent, is all planted, after trenching 4 ft. wide and 2 ft. deep; the evergreens on the lots around the park are also planted.

Am highly pleased at the arrival of Dr. Engelman from Europe, perhaps you have already seen him in Philadelphia."

BEAUTIFUL GLADIOLUS.—For years we have seen little improvement in these plants; but when in Boston last fall, Col. Wilder kindly took us to the pretty place of Mr. W. C. Harding, were we never saw Gladiolus so beautiful. The following six were perfect gems. Mozart, Thunberg, Oscar, Citrinum, Stella, Cereus.

THE WESTERN FARMER—of Madison, Wis., is now owned and edited by Morrow & Bro., formerly of the *Western Rural.* Of course this means that the *Western Farmer* will take rank amongst our leading Agricultural Journals. These gentlemen are well known for their ability among the Agricultural fraternity.

THE SMALL FRUIT RECORDER—By A. M. Purdy, Palmyra, N. Y. This is a small monthly edited by a well known fruit grower, and published at a low price. Those who are practically engaged in fruit culture, when they have good habits of observation and ability to impart what they know, always make the best teachers, and in this respect the *Recorder* has eminently the material for success.

NEW AND RARE FRUITS.

CORNELL'S FANCY APPLE.

(*See Frontispiece.*)

It is a subject of general remark, that the lists of new apples are inconveniently large—any new apple can be introduced to public notice. In former times it took some knowledge to name a new fruit. The question first asked was, "has it any peculiarity which will render it an improvement over others existing?" The knowledge requisite to answer a question of this kind, is no longer thought necessary to constitute one a pomological authority. Any one who can testify to a fruit being truly "a seedling," can name and introduce a fruit. Thus we have confusion on confusion, and no one knows when he buys a new fruit whether or not he is going to add anything really worthy to his collection.

The *Gardener's Monthly*, as its records prove, has not aided in this confusion. It has not labored to achieve a cheap reputation for pomology by naming and describing every tolerably good fruit that is sent to it, and warranted to be "a seedling;" but when it has been satisfied that anything offered had some distinguishing merit, that would let it live for some time in popular estimation, it has given it prominence and support. Among apples such as Grime's Golden Pippin, Chenango Strawberry, Williams, of Mass, Ben Davis, Belmont, Jackson, Water, Buckingham, Prinz, Rome Beauty, York Imperial, the

Starr,—and amongst Pears the Mount Vernon, President, Clapp's Favorite, Selleck, Edmond, Democrat, Ravenswood, Moore, Rutter, are a few which we remember as we write, as amongst the class of varieties which have been either described, or received much of their popularity through notices in our Journal. Very few if any fruits which have been favorably noticed by us have proved of evenascent fame only.

The one we now give is one of these thoroughly reliable, well tested kinds, which will live for many years, as it has already lived in the immediate locality of its origin, and which in general quality is well worthy of the expense incurred by the publishers in the illustration. The following is its exact history.

The Cornell's Fancy Apple originatedsome sixty or seventy years ago, on the farm of Gilliam Cornell, near the Street road,in Southampton Township, Bucks Co , Pa. It came up in a fence row. It appears that he took considerable interest in fruit culture;he planted a pear orchard and took pains to distribute grafts of his favorite apple among his friends and neighbors, so that it has been disseminated in that section and in the adjoining parts of Montgomery and Philadelphia Counties for at least forty years, he having been deceased upward of 30 years. The tree is vig orous and healthy, an upright, rather spready grower; productive and a regular bearer, making a handsome, regular tree both in the nursery and orchard, with large leaves slightly recurved.

Fruit described by Downing as "medium oblong, conical; color, waxen yellow, shaded and splashed with crimson; stalk of medium length cavity rather large, calyx closed abrupt corrugated, flesh white, tender, crisp, juicy, with a pleasant sub-acid flavor; core medium or large, very good."

The Walter Grape Test.—The undersigned, a sub-committee appointed by the N. Y. State Grape Growers' Society, have this day made a thorough test, with the saccharometer, of the Walter Grape presented by Ferris & Caywood of Poughkeepsie, N. Y.

One and a half pounds of the grapes were mashed, and the must marked 104 degrees on the scale. We consider it one of the best, if not the very best of the Wine Grapes of America.

J. Larrowe, J. D. Masson, Geo. W. Nichols, *Committee.*

Speckled or Westbrook.—From Mr. Blodgett we have excellent samples of this fine apple. Mr. B. deserves great credit for the liberal and thoroughly disinterested manner in which he is bringing this valuable, old and yet almost unknown kind to public notice.

INTELLIGENCE.

Old Pear Tree in N. C.—There is a pear tree in Orange county, N. C., over 100 years old. It is ten feet in circumference, about three feet in diameter, and still is bearing fruit. There is much decay in its branches, but the body seems to be perfectly sound. It was brought from Virginia in the lap of the grandmother of the late Willie P. Mangum.—*Southern Paper.*

Large Stock.—Those of our readers who admire fine stock, may feel interested in the following paragraph.

Hon. Jno. Danforth of New London, Conn., sent a sworn statement to the Agricultural Department, Washington, D. C., under date of December 28th, 1868, that two Ohio Improved Chester Hogs purchased of S. B. Silver, Salem, Ohio, weighed when 20½ months old, as follows, one named Slick, one thousand three hundred and fifty four pounds, (1354), one named Beauty, one thousand four hundred and fifty two pounds, (1452.)

Lachenalias—The genus *Lachenalia*, which comprises some of the most beautiful dwarf bulbous plants, now requires especial attention in regard to potting, &c. There are several species, many of which are much better than the old and well-known L. tricolor, and are consequently well worthy of cultivation. They delight in a free open compost of fibrous loam and sandy peat: being almost all natives of the Cape of Good Hope, a low temperature of from 38° to 45° is best suited for them through the winter months. In potting up store pots the bulbs contained in old balls should be divided, and rare better if kept separate when placed in the fresh pots, though many may be placed in at equal distances apart in each.—*Gardener's Chronicle.*

FOREIGN CORRESPONDENCE.

THE HAMBURG INTERNATIONAL HORTICULTURAL EXHIBITION.

From an Occasional Correspondent.

Hamburg, *October 15th*, 1869.

Friend Meehan—In duty bound to do nothing regular, but anything "occasional," I set out for this place to see the exhibition, now going on. I was tempted to it by the well known fame of the town of Hamburg in regard to the raising of vegetables, and the no less well known fame of such nurserymen as Booth, and such seedsmen as Peter Smith, both, by the way, English names derived from English ancestors, who had emigrated to Hamburg and founded establishments that might, like "St. Pauls Church in London," carry in their way the inscription:

Si monumentum quævis circumspice.

The number and the excellence of the glass houses; the extent and the high cultivation of the nursery grounds; the business talents and extensive trade of the firm of Booth, shall but be touched upon in this letter, so shall the establishment of Peter Smith & Sons, doing the largest seed trade in Germany. Neither will I say of Hamburg and vicinity anything further, but that it contains a good many lovers of flowers and fruit, rich and poor, high and low, that it enjoys a most miserable climate, something like the east coast of England; that cultivation is up hill work, and that probably the difficulties of soil and climate have brought out the love for the work and the ambition, and made mind conquer matter, as is often the case in this sublunary world.

But let us to the show grounds,—a large plot of ground on the ancient ramparts. Hamburg was dismantled I believe in 1818, and its fortifications, bastions, etc., turned into a garden belt round the city; not very wide in some places, but all the longer. The glacis opposite the quondam ba'tery called the Stintfang, was taken into the grounds, and the moat between spanned by pretty bridges. The natural "accidents" of the ground, as the French term it, give the relatively small space an apparent vastness, and offer a variety of sights and views. Prizes were offered by the Sovereigns of Germany, by Queen Victoria, by the "Ministers of Agriculture" of several States and Empires, by different cities, by the suburb St. Paul, where the fair is held, (one thousand dollars) and by a host of private individuals. Competition was open to anybody and everybody. Thus the prizes were won by simple gardeners, nurserymen, botanists, nobleman and princes all over Europe. The donors pleased their own fancies. Victoria, for instance, gave a silver wine-jug "for the best specimen of grapes," awarded by the committee to Jos. Meredith, in Garston, near Liverpool; "Director," J. Linden in Brussels, Jean Verschaffelt in Ghent, and J. Veitch of Chelsea, figure a great many times as winners of different prizes, and their shows were wonderfully fine indeed, both as to variety and novelty. Mr. Linden carried off for one, the great Prussian medal (value 100 dollars) for "twelve or more plants, distinguished for beauty of either flower or leaf, under perfect cultivation, never before exhibited, nor sold to the trade; hybrids, and varieties of plants heretofore known, not admitted; no more than one orchid admitted to every twelve plants; merit not number to decide."

Charles Pfersdorff in Paris, exhibited the finest and the largest number of Cacti. He got two medals, both donated by two different individuals, who like you had a passion to find out in what ratio attraction increases with the ugliness. By the way, why not have a convention of Cactus growers sometime, somewhere?

Three men, two gardeners and one "consul," got the prizes for strawberries, "flavor to decide." I admire that proviso, for what, says the poet, is quantity to quality?

Among the odd things were the following:

A prize for "the best three branches of the genuine three-leaved myrtle, such as used by the jews at ther feast of Tabernacles;" won by Dægelow, Altona, silver cup.

A prize for the best grotto made of coal, one hundred dollars; winner, Erich & Brey, Hamburg. (Go and do likewise, men of Pennsylvania.)

A prize "L. Growth in Guben, consisting of a dozen bottles of French Burgundy grown in his own vineyard in Guben in Saxony," which somebody was unlucky enough to get. That must have been a card. Guben excels in growing (manufacturing) all sorts of Champagne. Awful stuff!

As further worthy of note, I mention the following prizes:

Machine for transplanting large trees, $100, Peter Smith, Hamburg.

For the best group of Rocks or ruin or grotto, $100, Boettner in Greussen.

For the best arbor, (wood or iron.)

For the best plan of a garden and for its execution.

For the best statue representing horticulture.

For the most correct classification of fruit.

The best feature of the exhibition was its international character. Verily we progress, the barriers fall, space is annihilated, so are the ancient systems of customs, passports, frontiers, etc. The "international" is the first step towards the "universal"

Sorry was I though, not to see my own country better represented. The sea and the distance are no longer excuses.

HORTICULTURAL NOTICES.

GRAPES AT CANANDAIGUA, N. Y.

FROM A CORRESPONDENT.

The Grape-growers Association of New York, held its first annual meeting at this place, on the 7th and 8th of October last. The display of Grapes was superb, numbering something over 800 dishes; all the most promising, as well as the old tried varieties being represented on the occasion. In the opinion of grape men, this was the very best display of Grapes ever made on the continent of America, and shows to a certainty that Western New York can only be beaten by California in the matter of grape growing. Ellwanger & Barry here, as well as in other places, leads off with one of the finest collections of native grapes we have ever seen, exhibiting one dish only of each kind, showing in the aggregate 50 varieties, amongst which were some splendid samples of Rogers Hybrids, including Nos. 3, 4, 9, 15, 19, 33, 40, 41, 43, &c. If we mistake not No. 43 will be one of the greatest favorites among grapes in the course of a few years. The Pleasant Valley Wine Co. of Hammondsport, N. Y., had a very fine collection, the pride of which were the most beautiful Catawbas and Ionas. Hoag & Co., of Lockport, R. B. Shaw, of Canandaigua, A. P. Randall, of Penn Yan, and J. W. Clark, of Naples, had very fine collections, followed by a great number of others with smaller collections. E. G. Lapham, of Canandaigua, had a very fine collection of Exotic Grapes, that well deserves honorable mention. The Iona was shown here from various localities in splendid condition, and had a great many admirers and warm friends.

Of the newer varieties, the Salem was exhibited by T. L. Harris, Salem on Erie, and seems to be quite a promising variety. Dr. Grant had his new grape "The Eumelan," which, (although a good flavored grape) will never become very popular except larger bunches can be grown than the specimens shown, both here and at the State fair, at Rochester. The Diana Hamburg was shown by Jacob Moore, and is by the way, the most Hamburg like looking of any hybrids we have met with, (in fact, gentlemen that do not believe that Rogers Hybrids are true Hybrids, says that it (D. H) is too foreign altogether, these skeptics in the art of Hybridization are certainly very hard to please.)

The "Walter" was shown by Ferris & Caywood, and seems to be making c nsiderable number of friends. Dr. F. W. Perrine, of Dansville, had a new seedling he calls the Downing, in appearance like the Delaware, but greatly inferior to our old favorite variety. Barney & Carlin, of Sandusky, Ohio, exhibited the Loraine, an amber colored grape, and a greenish white looking grape, called White Diana. Dr. Underhill, of Croton Point, had a number of Hybrids, as had Charles Arnold, of Paris, Ontario, among which are some that probably will be acquisitions. In the evening of the second day an address was read by the Secretary, prepared by Dr. Grant, subject, "The successful advances in Grape Culture in the United States."

It is to be regretted that the Doctor should be so egotistical as he is on the grape question, (he having done so much himself in furtherance of the cause,) as he about as much as claims that his own grapes are nearly all there is that is worth spending one's time on; apart from this the paper was very interesting. As an exhibition of fine grapes, this was a most decided success, and we are sorry that it was not more successful in a pecuniary sense, the people of Canandaigua not taking that warm interest in it they ought to have done, to have swelled the receipts and made it successful every way.

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